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Granger's Physical Therapy

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In writing his book Dr. Granger realized the great importance of this subject, the constantly growing application of physical methods in treatment by the general practitioner and the necessarily limited equipment to be found in the usual physician's office. Dr. Granger has written a book that is particularly valuable to the general practitioner. It is primarily a book on the technic, the "how," the *application* of physical therapeutic methods. The advice which it gives is based on nearly a quarter of a century's practical experience. One of the outstanding features of the book is the "Index of Diseases." This is a section of 140 pages, in which the diseases and conditions, arranged alphabetically, are considered from the physical therapeutic standpoint—giving indications for the kind of physical treatment, the actual technic, dosage, frequency, etc. This section is fully illustrated.

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ZOALITES FOR INFRA-RED THERAPY
ELECTRIC LIGHT BATH CABINETS

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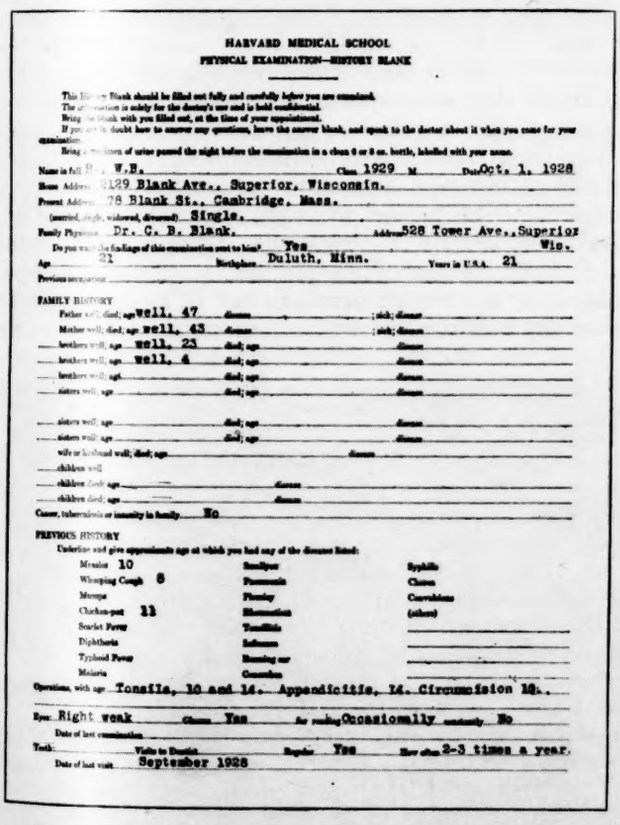
PERIODIC HEALTH EXAMINATIONS AS PART OF A MEDICAL STUDENT'S CURRICULUM *

REGINALD FITZ, M.D.

BOSTON

April 3, 1925, the faculty of Harvard University Medical School voted to require a yearly physical examination of all its students. Two years later Dean David L. Edsall and Prof. Henry A. Christian suggested that such yearly examinations should be made a recognized part of the students' medical training. For, if the matter of periodic health examinations is of as great importance as has been recently stated, it would seem necessary to give to medical students systematic instruction in the method of carrying out such examinations. Accordingly, for the past two years, the experiment has been tried at Harvard of making a teaching exercise of the students' annual health examinations. This paper describes the method used at present for this kind of teaching.



HARVARD MEDICAL SCHOOL
PHYSICAL EXAMINATION—HISTORY BLANK

This History Blank should be filled out fully and carefully before you are examined.
The information is solely for the doctor's use and is held confidential.
Bring the blank with you filled out, at the time of your appointment.
If you are in doubt how to answer any questions, leave the answer blank, and speak to the doctor about it when you come for your examination.
Bring a specimen of urine passed the night before the examination in a clean 6 or 8 oz. bottle, labelled with your name.

Name in full R. W.B. Class 1929 M. Date Oct. 1, 1928
Home Address 2129 Blank Ave., Superior, Wisconsin.
Present Address 78 Blank St., Cambridge, Mass.
(married, single, widowed, divorced) Single.
Family Physician Dr. C. B. Blank. Address 528 Tower Ave., Superior Wis.
Do you want the findings of this examination sent to him? Yes
Age 21 Birthplace Duluth, Minn. Years in U.S.A. 21
Previous occupation

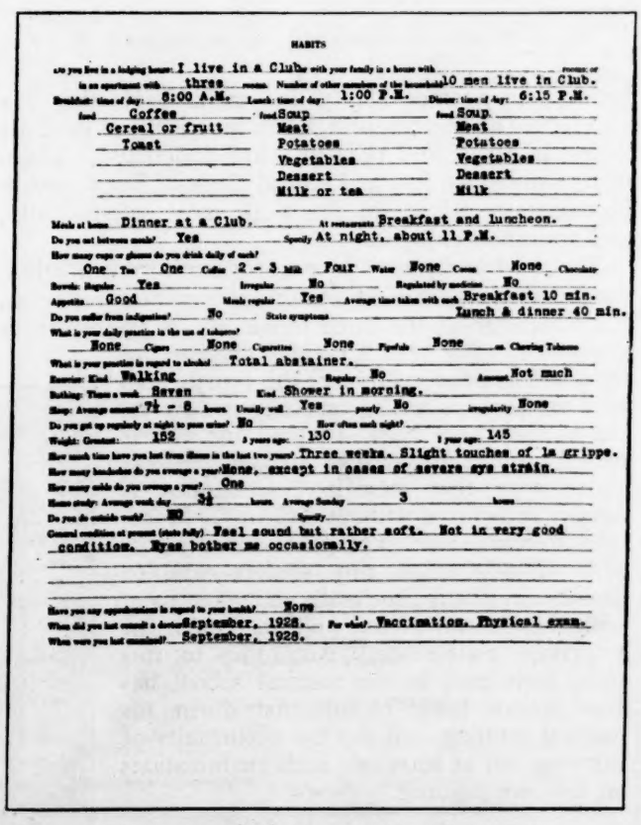
FAMILY HISTORY
Father well; died; age well, 47 disease; sick; disease
Mother well; died; age well, 43 disease; sick; disease
brothers well; age well, 23 died; age disease
brothers well; age well, 6 died; age disease
brothers well; age died; age disease
sisters well; age died; age disease
sisters well; age died; age disease
wife or husband well; died; age disease
children well
children died; age disease
children died; age disease
Cancer, tuberculosis or insanity in family No

PREVIOUS HISTORY
Underline and give approximate age at which you had any of the diseases listed:

Measles 10	Smallpox	Syphilis	
Whooping Cough 8	Pneumonia	Chorea	
Mumps	Pleurisy	Convulsions	
Chicken-pox 11	Rheumatism	(other)	
Scarlet Fever	Tonsilitis		
Diphtheria	Influenza		
Typhoid Fever	Running ear		
Malaria	Gonorrhea		

Operations, with age Tonsils, 10 and 14. Appendicitis, 14. Circumcision 14.
Eyes Right weak Glasses Yes For reading Occasionally Constantly No
Date of last examination
Teeth Visits to Dentist Regular Yes How often 2-3 times a year.
Date of last visit September 1928

Fig. 1.—Students' history blank (front); sheet, 8 by 10 inches.



HABITS

Are you living in a lodging house? I live in a Club or with your family in a house with ... rooms; or in an apartment with three rooms. Number of other members of the household 10 men live in Club.
Breakfast: time of day: 8:00 A.M. Lunch: time of day: 1:00 P.M. Dinner: time of day: 6:15 P.M.

Coffee	Soup	Soup
Cereal or fruit	Meat	Meat
Toast	Potatoes	Potatoes
	Vegetables	Vegetables
	Dessert	Dessert
	Milk or tea	Milk

Meals at home Dinner at a Club. At restaurants Breakfast and luncheon.
Do you eat between meals? Yes Specify At night, about 11 P.M.
How many cups or glasses do you drink daily of each?
One Tea One Coffee 2 - 3 Milk Four Water None Cocoa None Chocolate
Bowels: Regular Yes Irregular No Regulated by medicine No
Appetite Good Meals regular Yes Average time taken with each Breakfast 10 min.
Do you suffer from indigestion? No State symptoms Lunch & dinner 40 min.
What is your daily practice in the use of tobacco?
None Cigars None Cigarettes None Pipefuls None oz. Chewing Tobacco
What is your practice in regard to alcohol Total abstainer.
Exercise: Kind Walking Regular No Amount Not much
Bathing: Times a week Seven Kind Shower in morning.
Sleep: Average amount 7½ - 8 hours. Usually well Yes poorly No Irregularly None
Do you get up regularly at night to pass urine? No How often each night?
Weight: Greatest 152 5 years ago 130 1 year ago 145
How much time have you lost from illness in the last two years? Three weeks. Slight touches of la grippe.
How many headaches do you average a year? None, except in cases of severe eye strain.
How many colds do you average a year? One
Home study: Average week day 3½ hours. Average Sunday 3 hours
Do you do outside work? NO Specify
General condition at present (state fully) Feel sound but rather soft. Not in very good condition. Eyes bother me occasionally.
Have you any apprehensions in regard to your health? None
When did you last consult a doctor? September, 1928. For what? Vaccination. Physical exam.
When were you last examined? September, 1928.

Fig. 2.—Students' history blank (reverse).

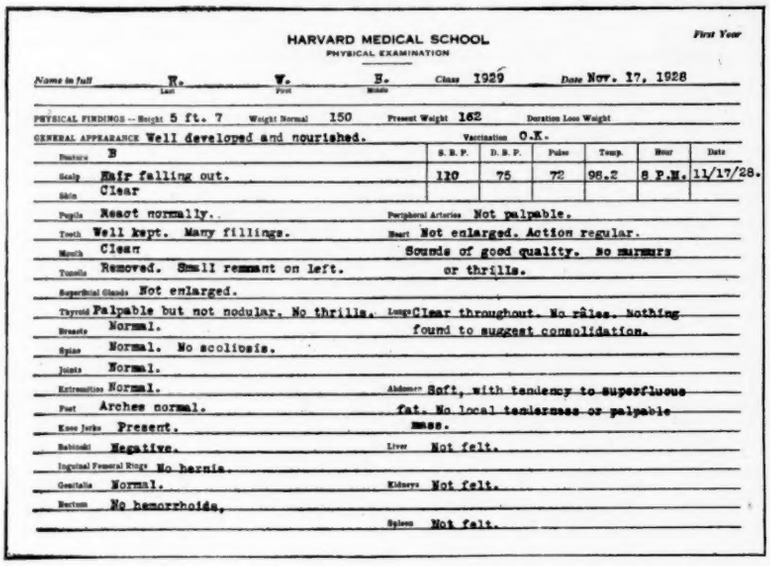
METHOD OF EXAMINING THE STUDENTS

There are approximately 125 men in each of the four classes of the medical school. Of these men, the first and second year students have not had any training in physical diagnosis. The fourth year men have had a considerable experience in taking histories and making physical examinations. They are considered skilful enough to work as clinical clerks in the wards of the various hospitals, and their clinical observations are incorporated as part of the permanent hospital records. The third year men have had some instruction in physical diagnosis but are still somewhat unpracticed and amateurish. Briefly, therefore, there is a group of 500 men to be examined and taught about periodic health examinations. Of these, half know nothing of physical diagnosis, a quarter have had some training in the technic of physical examinations and a quarter are

* From the Medical Clinic of the Peter Bent Brigham Hospital.
* Read before the Annual Congress on Medical Education, Medical Licensure and Hospitals, Chicago, Feb. 19, 1929.

capable of conducting accurate physical examinations under supervision.

About twenty members of the fourth year class are invited to volunteer as clinical assistants. These assistants are picked from their classmates as being men of better than average ability and enthusiasm; they are also picked as being honest, loyal, conscientious students whose integrity and reliability are undoubted. These men examine the first and second classes. They quickly become very adept, do the work most satisfactorily, and appear to enjoy it.



HARVARD MEDICAL SCHOOL
PHYSICAL EXAMINATION
First Year

Name in full K. (Last) W. (First) B. (Middle) Class 1929 Date Nov. 17, 1928

PHYSICAL FINDINGS — Height 5 ft. 7 Weight Normal 150 Present Weight 162 Duration Loss Weight

GENERAL APPEARANCE Well developed and nourished. Vaccination O.K.

		S. B. P.	D. B. P.	Pulse	Temp.	Hour	Date
Posture	B						
Scalp	Hair falling out.	120	75	72	98.2	8 P.M.	11/17/28.
Skin	Clear						
Pupils	React normally.						
Teeth	Well kept. Many fillings.						
Mouth	Clear						
Tonsils	Removed. Small remnant on left.						
Superficial Glands	Not enlarged.						
Thyroid	Palpable but not nodular. No thrills.						
Breasts	Normal.						
Spine	Normal. No scoliosis.						
Joints	Normal.						
Extremities	Normal.						
Feet	Arches normal.						
Knee Jerks	Present.						
Babinski	Negative.						
Inguinal Femoral Rings	No hernia.						
Genitalia	Normal.						
Rectum	No hemorrhoids.						

Peripheral Arteries Not palpable.
Heart Not enlarged. Action regular. Sounds of good quality. No murmurs or thrills.
Lungs Clear throughout. No râles. Nothing found to suggest consolidation.
Abdomen Soft, with tendency to superfluous fat. No local tenderness or palpable mass.
Liver Not felt.
Kidneys Not felt.
Spleen Not felt.

Fig. 3.—Physical examination blank (front); cardboard sheet, 7 by 10 inches.

The third and fourth year men examine one another, the fourth class examining the third class and vice versa. Each member of the three junior classes, therefore, is guaranteed each year a careful overhauling by a well trained examiner; the fourth year men are perhaps not so carefully gone over, but as they have been observed for a long period of time any new or striking physical abnormality that may have developed is usually recognized without difficulty. Moreover, to insure against mistakes and any possible dissatisfaction, any student who so desires can at any time make an appointment with the director of the students' health for a private conference. According to this plan, each man in the medical school has four periodic health examinations during his medical training, and has the opportunity of carrying out at least two such examinations on his own account.

STUDENTS' MEDICAL HISTORIES

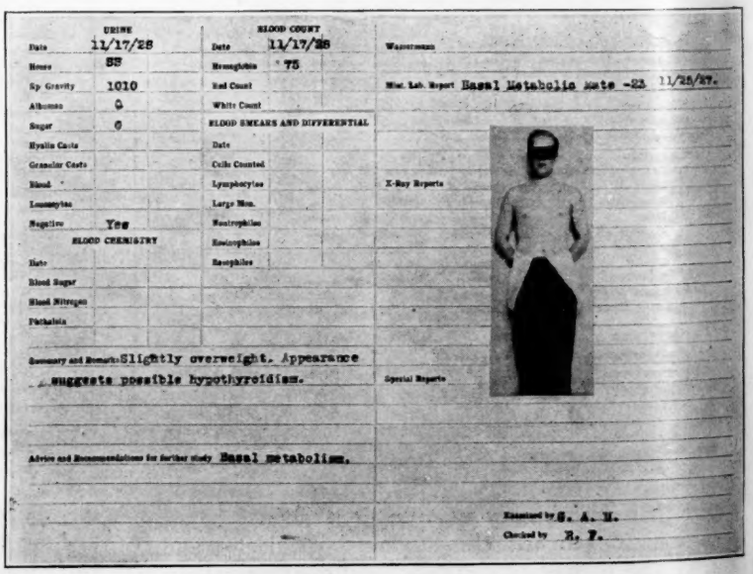
Each student on admission to the school fills out a history form which summarizes his personal medical experience. The first year men write a fairly detailed account of their lives, and in subsequent years merely add such information as is of medical interest. A perusal of these histories gives the director an adequate clinical history of each man quickly and allows him to make a special point of examining for himself any men who appear to offer any special medical problems.

PHYSICAL EXAMINATION FORM

The examinations are carried on in the rooms of the medical outdoor department of the Peter Bent Brigham Hospital. Groups of not more than thirty men are examined at a time, the examinations being conducted three evenings a week at the beginning of the school term between the hours of 7 and 10 o'clock.

Each student is sent a notice stating at what hour he is to report at the hospital. At the beginning of each exercise the roll is called and the director describes to the group as a whole the purpose of the meeting. Then each student is given his physical examination blank, he is sent to an examining room with his examiner, and the work is commenced.

Certain points in the physical examination are stressed, so that each is made in uniform fashion. Height is measured in inches and weight in pounds, the men being weighed in their ordinary clothing. Since each student in Harvard University is required to show evidence of having been successfully vaccinated, each man is inspected carefully for his vaccination scar. Posture is graded A, B, C or D by observing the manner in which the man holds himself rather than by the more complicated method of photography. Certain skin lesions have been found to occur with a good deal of regularity; epidermophytosis is the common lesion, acne is seen not infrequently, and occasional cases of impetigo, eczema or furunculosis occur. Skin lesions which appear to require special treatment are carefully described. Each one of the headings in the left hand column of the physical examination sheet is filled out in adequate detail, so that fallen arches, exceptionally bad tonsils, hernias, hemorrhoids or varicoceles are not often overlooked. Since a certain number of normal young men are found to have easily palpable peripheral blood vessels, a special note is made on this point. The heart is examined with great care, not only for the purpose of recognizing any organic disease



URINE
Date 11/17/28
Hours 8S
Sp Gravity 1010
Albumen 0
Sugar 0
Hyalin Casts
Granular Casts
Blood
Leucocytes
Negative Yes

BLOOD CHEMISTRY
Date
Blood Sugar
Blood Nitrogen
Phthalein

BLOOD COUNT
Date 11/17/28
Hemoglobin 75
Red Count
White Count

BLOOD SMEARS AND DIFFERENTIAL
Date
Cells Counted
Lymphocytes
Large Mon.
Neutrophiles
Eosinophiles
Basophiles

Wassermann
Misc. Lab. Report Basal Metabolic Rate -23 11/25/27.
X-Ray Reports
Special Reports

Summary and Remarks: Slightly overweight. Appearance suggests possible hypothyroidism.

Advice and Recommendations for further study Basal metabolism.

Examined by G. A. H.
Checked by R. F.

Fig. 4.—Physical examination blank (reverse).

which may occur but also to demonstrate in a practical way to students the frequency with which systolic murmurs are to be heard in the hearts of normal persons. The lungs, too, are examined in a painstaking fashion to demonstrate especially how difficult it may be to

Fig. 5.—Students making health examinations on one another; a view of the laboratory.

differentiate between a normal and an abnormal right apex. Blood pressure determinations each evening are made by one assistant who does nothing else. The determinations are made with the subjects lying flat. The pulse rate is recorded after a reasonable rest period, and oral temperatures are recorded.

When a man's physical examination has been completed and written up by his student examiner, the director of the students' health or the assistant director is notified. Then, while the man is still undressed, the important features of his examination are checked up by his student examiner and an older better trained instructor. The possible systolic murmur is demonstrated and its significance discussed. The alleged râles at the right apex are perhaps shown to be due to muscle sounds, or the practical insignificance of a small hemorrhoid or hernia is talked over.

Finally, any recommendations in regard to more special studies are taken up. Perhaps a man needs a metabolism test or skin tests for asthma, or his posture should be corrected, the bowels regulated, or advice given in regard to what kind of food he should eat. These matters are gone into. At last the examiner signs his name to the record, as does the man who checks the examination, and the subject puts on his clothes and goes home, or goes to work, while his erstwhile examiner proceeds to undress.

THE LABORATORY WORK

On the reverse side of the physical examination form is space for various laboratory data and special reports. The urine of each student is analyzed and a hemoglobin determination made as a routine. Wassermann tests are made only in special cases. Ordinary laboratory work is done by a student assistant. When albumin or sugar is found, the subject is asked to report again on another evening. If necessary, studies of renal function, chemical tests of the blood, differential blood counts, or any other laboratory studies are made later.

THE SPECIAL CONSULTATION SERVICE

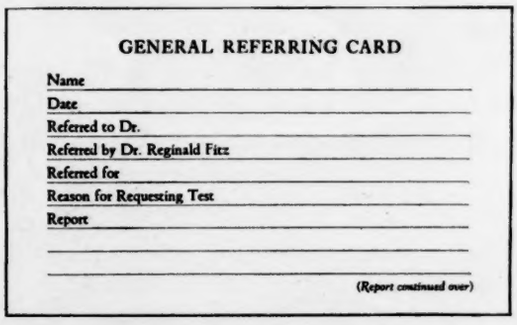
In order to guarantee each man an adequate examination, the services of various consultants are sometimes required. There is therefore in connection with our students' health organization a consultation service including an ophthalmologist, ear, nose and throat specialist, dentist, dermatologist, orthopedic surgeon, general surgeon, genito-urinary surgeon, radiologist, and neuropsychiatrist. These consultants serve without pay and see such students as are referred to them by the director.

In order to impose on the various consultants as little as possible, and yet at the same time to give the students proper care, the director sees each man who requires the services of a consultant and refers the patient personally to the office of the physician indicated. The consultant's report is returned to the director and added to the man's record. If any definite line of treatment is prescribed, this is carried out as far as possible under the director's guidance. Thus the various problems that arise in connection with the students' health are well centralized, complete records are kept and all medical information in regard to the men is easily available.

THE RESULTS OF STUDENTS' HEALTH EXAMINATIONS

Our students' health examinations have been carried out in this fashion for only two years, so that it is premature to draw conclusions as to the value of the method from the point of view of medical education. Yet, as director, I have obtained certain impressions as to its efficacy.

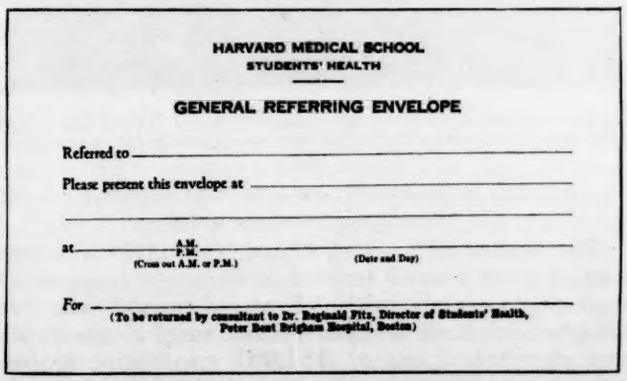
The examinations are very perfectly and systematically made, as the students take up the exercise seri-



GENERAL REFERRING CARD

Name _____
Date _____
Referred to Dr. _____
Referred by Dr. Reginald Fitz
Referred for _____
Reason for Requesting Test _____
Report _____

(Report continued over)



HARVARD MEDICAL SCHOOL
STUDENTS' HEALTH

GENERAL REFERRING ENVELOPE

Referred to _____
Please present this envelope at _____
at _____ A.M. P.M. _____
(Cross out A.M. or P.M.) (Date and Day)
For _____
(To be returned by consultant to Dr. Reginald Fitz, Director of Students' Health, Peter Bent Brigham Hospital, Boston)

Fig. 6.—Students' health referring card and envelop; card, 3 by 5 inches.

ously and have confidence in its value. They cooperate in every way and learn how to examine a healthy person. They are interested in the follow-up work of their own cases. They are encouraged to go over their

own records year by year and thus have an opportunity of acquiring some impressions as to whether or not they consider periodic health examinations of any real value. They also learn something about the importance of keeping fit and know at least whether they are eating too much, working too hard or exercising too little. The few men in the school with organic disease of any kind are recognized and protected as far as possible by adequate medical supervision. On the whole, this method of teaching a relatively new phase of medicine appears to be of interest and worthy of more general employment.

LOCAL DIATHERMY

INFLUENCE ON KIDNEY SECRETION AND ON INTRAMUSCULAR AND SUBCUTANEOUS ABSORPTION *

M. H. FRIEDMAN, PH.D.
CHICAGO

If diathermy induces local hyperemia, one might expect diathermy to accelerate the absorption of substances from subcutaneous and intramuscular tissues. Similarly, if it is possible to produce hyperemia in the kidneys by means of diathermy, one should be able to demonstrate an increased rate of urinary secretion. On the basis of such reasoning, these experiments were planned. In their execution the advice of A. F. Pacini, at the time research director of the Victor X-Ray Corporation, was frequently sought. I am indebted to him for his cooperation and to the Victor corporation for supplying the diathermy apparatus and accessories.

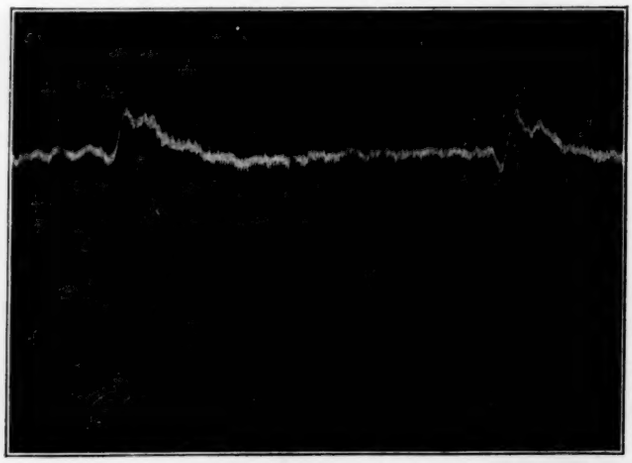


Fig. 1.—Effect of thirty second massage of control (14-15) and treated (16) areas four hours after the injection of epinephrine.

THE ABSORPTION OF SUBCUTANEOUSLY INJECTED EPINEPHRINE

The method of Luckhardt and Koppányi [1] was utilized, dogs of from 7 to 10 Kg. in weight being anesthetized by mouth with 1.5 cc. of paraldehyde per kilogram of body weight. When surgical anesthesia was obtained, 2 cc. of 1:1,000 epinephrine hydrochloride was injected subcutaneously into a shaved area on the lateral aspect of each thigh about 3 cm. below the level of the head of the femur. The dogs were placed in the supine position and the thighs were supported by small gauze pillows. Between the injected area on one side and the supporting pillow was inserted a heavy foil electrode 3 cm. by 3 cm. which was closely adapted to the soaped skin. On the medial aspect of this thigh, exactly opposite the position of the smaller electrode, was placed a larger electrode, 5 by 5.5 cm., which was held firmly in position by the weight of a sandbag on a small gauze cushion. The other leg was similarly cushioned and weighted for control. Thirty minutes after the injection, diathermy was applied to the one limb, a current of from 250 to 300 milliamperes being employed as a routine. This current was maintained for a half hour. Then at various intervals afterward each of the injected areas was massaged alternately for the same length of time and with as nearly equal intensity as possible. The height to which the blood pressure (measured in the usual manner from a carotid cannula) rose was taken as a criterion of the relative amount of epinephrine remaining in the injected area.

In preliminary experiments it had been determined that diathermy of the leg with such intensities as were used here did not have a discernible effect on blood pressure. Moreover, there was no rise in pressure, either abrupt or gradual, when epinephrine was injected into an area that had just been exposed to diathermy. Finally, diathermy of an area previously injected with epinephrine did not produce the hemodynamic action that is so readily produced by gentle massage.

In four dogs, massage of the injected sites four hours after the injection provoked an abrupt rise in blood pressure of a magnitude of from 30 to 40 mm. In no case, however, could one distinguish a significant difference between the response obtained from the control limb and the response obtained from the limb that had been subjected to diathermy for thirty minutes (fig. 1).

In eight dogs, massage of the injected sites eight hours after the injection induced a rise of only a few millimeters. The maximum rise of 16 mm. was observed only once. In the other experiments the response was about 10 mm. In only one instance was there any perceptible difference between the response from the treated and that from the untreated limb. In this instance the rise in blood pressure produced by massage of the limb which had received diathermy was slightly greater than that obtained from the control limb. This, of course, is just the reverse of what one would expect if the treatment with diathermy had accelerated the absorption or dissipation of the injected epinephrine.

Massage of the injected areas twelve hours after injection gave only slight and variable responses. Only if the blood pressure remained quite constant could one hope to see the effects of massage. Fortunately the massage of areas that had not been injected had no effect on blood pressure. Any movement of the legs of the dog at the time of massage or at other times produced only a fall in pressure. Consequently, any distinct, abrupt rise in pressure, even if slight, might justly be attributed to the hemodynamic action of the epinephrine. Of the six experiments in this group there were two in which no response whatever was obtained. In one other experiment the response was doubtful. On massage there was an abrupt rise of about 8 mm., but the momentary variations in the control periods were quite as great. In the three other experiments, a definite rise of from 6 to 8 mm. was obtained. Yet, despite this meager effect of massage, it can be definitely stated that

* From the Physiological Laboratory of the University of Chicago.
1. Luckhardt, A. B., and Koppányi, T.: Am. J. Physiol. 81: 436 (July) 1927.

when such a response was evoked the rise in pressure produced by massage of the limb treated with diathermy was quite as pronounced as that in the untreated limb.

In the final group of experiments with epinephrine, the technic was altered. Dogs were selected in pairs of about the same weight and anesthetized as before with paraldehyde. The skin over the sternum was clipped and shaved, as was the skin of the back in the upper thoracic region. Into the anterior shaved area 5 cc. of a mixture of epinephrine, 1 : 1,000, four parts, and of a stock solution of methylene blue (methylthionine chloride-U. S. P.), one part, were injected subcutaneously in each dog. Diathermy was administered to one of them, an electrode 5.5 by 5 cm. being used over the injected area, and an electrode 6.5 by 8 cm. over the posterior area. As usual, adaptation was accomplished by the use of gauze cushions and the weight of a sandbag, the control animal being identically cushioned and weighted. A current of 650 milliamperes was applied for one hour. Three hours later, or four hours after the injection, the injected areas, which were clearly demarcated by the blue stain, were excised with a generous border on all sides. These tissues were thoroughly macerated, ground with sea sand, and finally extracted with saline solution six times. After centrifugation, they were made up to 40 cc. These extracts were then assayed for their epinephrine content by the injection of 4 cc. intravenously into the control dog, the rise in blood pressure being noted and recorded in the usual manner. In eight experiments (sixteen dogs) there was no consistent difference to be observed between the extract of the injected tissues of the control animal and the extract of the tissues of the animal treated with diathermy. In the first experiment, in which the tissues of the control animal were thicker and more densely infiltrated with fat than the corresponding tissues of the treated animal, there was a considerable difference between the epinephrine content of the two extracts. Four cubic centimeters of the extract of the control tissues produced a rise of 68 mm. when injected into the control animal, while 4 cc. of the extract of the tissues treated diathermically provoked a rise of only 30 mm. In the following experiments, however, in which care was taken to select the pairs of animals on the basis not alone of equal weight but also of approximately equal adiposity in the chest area (by palpation),

TABLE 1.—*Effect of Diathermy on the Absorption of Subcutaneously Injected Phenolsulphonphthalein in Dogs* *

Experiment	Diathermy, Milliamperes	Unabsorbed Dye, per Cent	
		Diathermy	Control
1	750	77 (E)	24
2	750	19	12
3	750	8	28
4	750	51 (E)	19
5	550	50	50
6	550	38	31
7	550	54 (E)	17
8	750	41	53

* The percentage of dye remaining unabsorbed in the tissues treated diathermically is in each case compared with the percentage of dye remaining unabsorbed in the tissues of the selected control animal. The dose of diathermy is given in milliamperes. E indicates that edema was noted in the subcutaneous tissues under the active electrode.

no such differences were again encountered. Thus, in the seven remaining experiments, the rise in pressure produced by the injection of the extracts of the tissues from the control animals was not significantly different from the rise produced by the injection of extracts prepared from the tissues of the treated animals (fig. 2).

THE ABSORPTION OF SUBCUTANEOUSLY INJECTED PHENOLSULPHONPHTHALEIN

In these experiments the technic followed was similar to that used in the last of the experiments with epinephrine, 1 cc. of the dye (6 mg.) being injected instead of the epinephrine-methylene blue mixture. The electrodes used were identical, as were the methods of application and adaptation. Now, however, diathermy was applied for only one-half hour instead of one hour. Thirty minutes later, or one hour after the

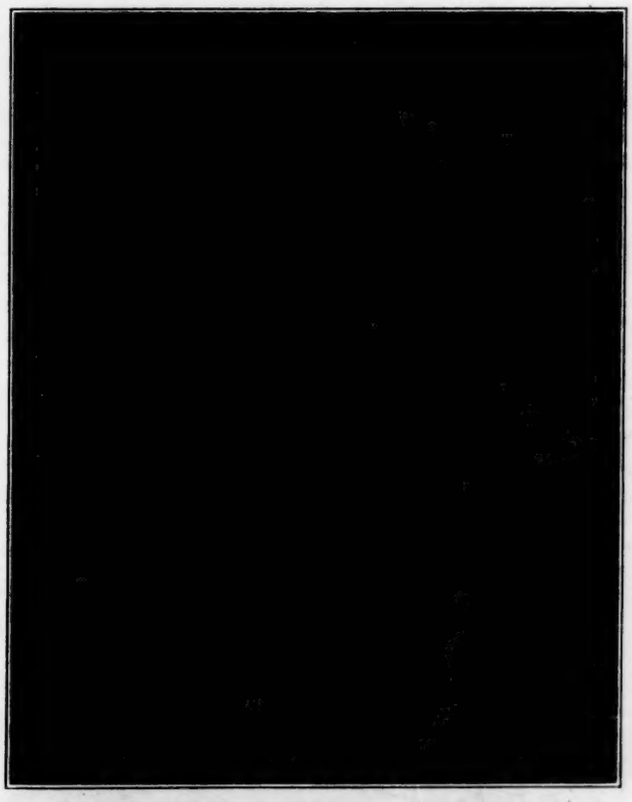


Fig. 2.—Effect of the injection of the extracts of tissues from areas treated diathermically and from control areas which had been injected with epinephrine. In this case the control extract had slightly greater potency than that obtained from the treated tissues.

injection, the dogs were killed by the intravenous injection of 2 cc. of chloroform and the dye-stained tissues were excised and thrown into five volumes of absolute alcohol to precipitate the blood pigments and proteins. The tissues were then finely macerated and shaken in alcohol, and the suspension was added to the original five volumes of alcohol. This suspension was centrifugated, and the supernatant fluid was poured into a volumetric flask. More alcohol was added to the tissues in the centrifuge bottle, and the mixture was allowed to stand for twenty-four hours with frequent shakings. Again it was centrifugated and the fluid poured into the volumetric flask. This process was repeated until no pink tinge could be seen on the addition of a drop of alkali to the fluid in the centrifuge bottle. Then the collected fluids were alkalized and made up to 500 cc. Their dye content was determined colorimetrically against a fresh standard made up in 95 per cent alcohol.

In table 1 the results of this series of experiments are shown, the unabsorbed dye being expressed percentally and the dosage of diathermy being given in milliamperes. It will be noticed that from one experiment to another the variations in the amount of dye

found are wide. Yet if one examines the results obtained in each pair of animals selected because of equal weight and approximately equal adiposity, the difference in the values obtained is not so great, except in the three instances wherein edema was produced by the diathermy. These results carry the suggestion that the rate of absorption varies in some inverse manner with the adiposity of the tissues. Evidence of a definite influence of diathermy on the absorption of this substance, however, is not manifest, unless edema is produced. With edema there appears to be a marked retardation of the rate of absorption.

ABSORPTION OF INTRAMUSCULARLY INJECTED BISMUTH

Under an ether rausch, the long bellies of the muscles of the lateral aspect of the thigh were rolled under the fingers of the left hand until one separate group could be picked up and practically encircled. From below a

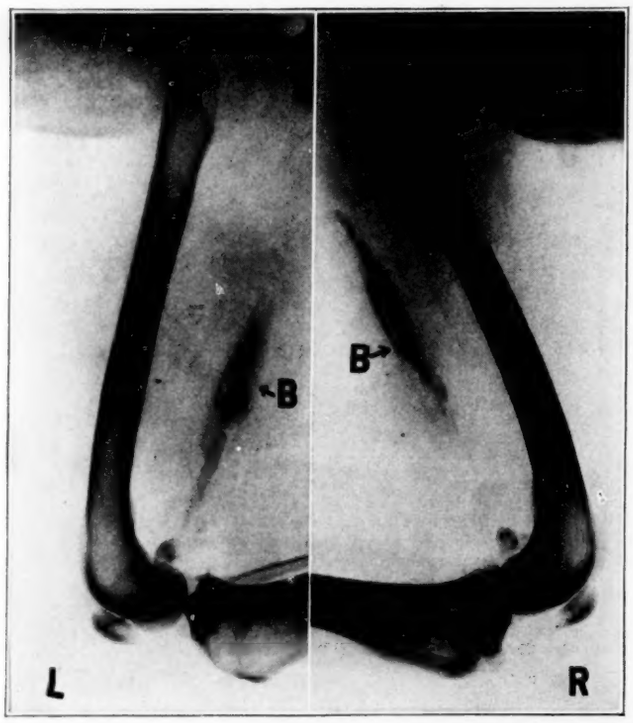


Fig. 3.—An example (*B*, *B*) of the distribution of bismuth potassium tartrate in a dog injected twenty-four hours previously. In this instance (table 2) the right leg, *R*, was used as the control limb.

hypodermic needle was thrust through the skin and then upward into the muscle mass which was being firmly held. After the injection of the bismuth compound, 2 cc. of air was injected without disturbing the initial position of the needle. In such manner equal quantities of bismuth compounds were injected into similar situations in each hind leg of several dogs. Immediately afterward, the limbs were roentgenographed. If the distribution of the injected material was similar in the two legs, and if the animal did not show any disability of movement of either hind limb, it was used for the experiment.

With one injected limb being kept as a control, the other was subjected to frequent diathermic treatments, the same electrodes being employed as were used in the first experiments with epinephrine and exactly the same technic, save that the dog was now placed in the lateral cubitus. The minimum current used was 250 milliamperes, the maximum 350; the exact dosage depended on the tolerance of the individual animal. In every case, however, the treatment lasted for one-half hour. By means of frequent roentgen examinations, the time required for the complete disappearance of the shadows of the injected material was determined. Throughout these experiments the roentgenographic technic remained the same, 70 kilovolts being used with an exposure of six seconds under 24 milliamperes at a distance of 30 cm. Moreover, the two legs of each dog were photographed at the same time and the films developed together, so that variations introduced by possible differences in the photographic technic were minimized.

During the first week after the injection, diathermy was applied daily. Although skin burns were not encountered, it was soon learned that the continuation of treatments at such frequent intervals led to crusting and cracking of the skin in the region of the active electrode. Occasionally this crusting was followed by the formation of blebs. To avoid this, no more than four or five diathermy treatments a week were given after the first week.

The first compound used for injection was bismuth hydrate in oil, 1 cc. of a 10 per cent suspension being injected into each hind leg of four dogs. These dogs were observed for four and one-half months. At the end of this time, shadows were still distinct both in the control limbs and in the limbs that had been subjected to diathermy. Consequently, these experiments were abandoned and a new series was started with 2 cc. of bismuth potassium tartrate in oil. This substance was obtained in vials from the Abbott Laboratories and contained 0.2 Gm. of the salt per cubic centimeter.

TABLE 2.—*The Effect of Diathermy on the Absorption of Intramuscularly Injected Bismuth Salts* *

Experiment	Dose	Number of Treatments	Control	Diathermy
1	350	36	56	56
2	350	24	54	59
3	350	9	16	16
4	300	11	15	18
5	350	14	18	18
6	250	14	20	18

* As in table 1 the dosage is given in milliamperes. Under the columns "control" and "diathermy" are given in days the time required for the complete disappearance of the shadows of the injected salts from the control limb and the limb treated with diathermy, respectively.

In table 2 are summarized the results of the experiments in six dogs. The time for complete disappearance of the shadows is expressed in days, but as roentgen examinations were not made any more frequently than every three or four days, the numbers appearing in the table express only the outside limit and may be a day or two in error. From these results, nevertheless, there is no indication that diathermy as here applied had any effect whatever on the rate of absorption of the injected bismuth salts.

RATE OF URINE SECRETION

In experiments in both acute and chronic conditions, female dogs about 8 Kg. in weight were used. In each animal the ordinary perineorrhaphy had been performed so as to facilitate the collection of urine by a urethral catheter.

In acute conditions, the dogs were anesthetized with paraldehyde, and an area on the lateral aspect of the lumbar region was clipped and shaved on each side. After these areas had been soaped with shaving cream, electrodes 6 by 8 cm. were placed so as to include the

kidneys between them. Adaptation was secured as usual by gauze pillows and sand bags with the dog in the lateral cubitus. After the normal rate of secretion had been established in several periods of fifteen minutes each, diathermy was administered with a current of from 850 to 1,000 milliamperes for fifteen minutes. The volume of urine secreted during the treatment was recorded, as well as the volumes for several periods of equal length after the cessation of the treatment. In each of four experiments, in which this procedure was many times repeated, the rate of urine secretion remained remarkably constant at a level of about 3 cc. every fifteen minutes regardless of whether or not diathermy was given. Simultaneous records of blood pressure from the carotid did not show any significant changes of level during or after the diathermy treatment.

In the chronic conditions, dogs which had been prepared exactly as had those for the previous experiment (save for the anesthesia) were given 200 cc. of water by stomach tube twenty hours after their last feeding. They were then placed on a board, the bladders were drained, and they were covered with a light blanket for comfort. At the end of forty minutes and again at the end of eighty minutes, collections were made to determine the rate of secretion during each of the forty minute periods. In a long series of control experiments the volumes obtained for each period were not very constant. In one dog, for example, the majority of the volumes obtained for the first period varied from 15 to 25 cc., and for the second period from 60 to 80 cc.; yet there were several occasions in which the volume for the second period reached 125 cc. The performance of these experiments on the dog after the withholding of food and water for thirty hours did not decrease these variations. Accordingly, this procedure was discontinued and the experiments were performed as a routine twenty hours after the last feeding. Alternately with control experiments were run tests in which diathermy was applied during the first forty-minute period. Thus in any given dog a diathermy experiment was run every other day or so, being sandwiched between days of control experiments.

Following such procedure in three animals, which tolerated 600, 825 and 900 milliamperes, respectively, the results obtained were consistently negative in sixteen diathermy and twenty-four control experiments on the first dog, eight diathermy and eight control experiments on the second dog, and twelve diathermy and twelve control experiments on the third dog.

In the belief that the water diuresis might be masking some slight effect on the treatment with heat, experiments were run on the three dogs without the preliminary administration of water. As in those with acute conditions, collections were made every fifteen minutes, two control periods preceding and following each period in which diathermy was administered. The fifteen minute volumes varied from 3.5 to 5.5 cc. For a given dog on any day, however, the volumes were remarkably constant and were utterly uninfluenced by the treatment with diathermy.

COMMENT

The consistently negative character of our results was not expected. Even in the presence of epinephrine with its powerful vasoconstrictor action, there was a marked erythema of the skin under the active electrode at the cessation of the diathermy treatment. This reddening was distinct even from five to eight minutes afterward. Apparently, then, hyperemia of at least the most superficial tissues was produced. In view of this hyperemia, and in view of a local rise in temperature, which should accelerate the destruction of such a labile substance as epinephrine by an increased rate of local tissue metabolism, it is somewhat surprising that marked differences in the epinephrine content between the tissues of the control areas and the tissues of the areas treated diathermically were not observed.

Unfortunately, the number of experiments with phenolsulphonphthalein were not so large as could be desired, the series being cut short by a change in residence. Yet, in the lack of consistent differences between the dye content of the injected areas in the treated dogs and the dye content of the corresponding areas in dogs selected because of their equal weight and approximately equal adiposity as controls, there is no evidence of a definite influence of diathermy on the absorption of this dye from the subcutaneous tissues.

Recently, Mehrtens, Hanzlik and Marshall [2] reported that the application of external heat (to the whole body) causes some acceleration of the urinary excretion of intramuscularly injected bismuth salts. This, however, does not necessarily mean that the rate of absorption from the initial intramuscular deposits was increased. There is, moreover, no question that chemical analysis would reveal lesser differences than could possibly be observed by our roentgenographic technic. It is hardly to be doubted that bismuth, chemically demonstrable, remained in the muscles when the deposits were no longer visible.

Criticism may be justly leveled against the methods and criteria used in each of our several series of experiments. It is realized that the rise in blood pressure is not strictly a linear function of the amount of epinephrine injected. Yet in animals under paraldehyde anesthesia with intact vagi, the response to the injection of 4 cc. of an extract of tissues previously injected with epinephrine was from 6 to 8 mm. higher than the response obtained by the injection of 3.5 cc. of this same extract. Obviously, if the differences produced by diathermy were only 15 per cent or less, they would hardly be disclosed by our methods of analysis. Such limitations were fully appreciated when in the planning of the experiments the criteria and methods were selected. If, however, the effects of diathermy must be measured in percentages which are within the usual biologic variations, it seems odd that definite effects are so frequently reported in patients.

Quite as important as any consideration of criteria and methods is the consideration of adequate dosage. Taking as a guide the dosages employed clinically, and respecting the caution of Nagelschmidt [3] not to exceed 30 milliamperes per square centimeter of electrode, we selected as a routine a dose of from 25 to 30 milliamperes per unit area of electrode. By means of control experiments involving the measurement of subcutaneous temperature by accurate mercury thermometers, we were assured that these dosages produced subcutaneous temperatures of from 43 to 46 C. in each series of experiments with acute conditions (animals under anesthesia). As was mentioned before, the dose employed in the chronic conditions depended on the tolerance of the individual dog. Fortunately, in the experiments on the absorption of bismuth, the dose used coincided with that employed in the first series of

2. Mehrtens, H. G.; Hanzlik, P. J., and Marshall, D. C.: Proc. Soc. Exper. Biol. & Med. **25**: 216, 1928.
3. Nagelschmidt, Franz: Lehrbuch der Diathermie, Berlin, 1926.

experiments with epinephrine, and was in agreement with our schedule of about 30 milliamperes per square centimeter of electrode. Control experiments performed on animals under various anesthetics with such a dose showed that a rapid rise of intramuscular temperature could be produced, the extent varying with the depth of anesthesia. With light morphine-ether anesthesia, or with paraldehyde, the increase in muscle temperature varied from 1.5 to 2.6 C., the maximum being reached more slowly than the maximum of the subcutaneous temperature recorded simultaneously. With barbital, or with deep ether anesthesia, greater increases in intramuscular temperature were registered; in one instance under barbital a rise of 9 C. was noted. In either case, the intramuscular temperature of the treated limb was not paralleled by that of the opposite limb, the latter remaining quite constant or rising very slowly. Further, the changes in intramuscular temperature were quite independent of the variations in rectal temperature, frequently the two going in opposite directions.

As may be seen from our data, the dosage we were obliged to use in the experiments on urine secretion were below our schedule. In a few experiments under ether, the dosages we had used produced a rise of intra-abdominal temperature of from 1.2 to 1.8 C. In an animal with a gastrostomy and not under anesthesia, the same doses produced a maximum rise of intragastric temperature of only 0.8 C. It is significant that in these experiments on the gastrostomy animal, as well as in those on the unanesthetized animals in the experiments on urine secretion, a marked polypnea accompanied the administration of diathermy.

Briefly, then, we may say that the amount of diathermy we used was capable of producing marked changes in the subcutaneous temperature in animals under anesthesia. In similarly prepared animals not under anesthesia, the rise in temperature in the deeper tissues was much less marked and reached the maximum more slowly. From the data obtained in these control experiments it is suggested that these temperature changes would be less in animals not under anesthesia. Whether such dosage is adequate or not is impossible to state. From the occasional edema in the acute experiments, and the slight skin disturbance with the daily treatments in the bismuth series, it would appear that we were employing a dose that was toward the upper limit of desirability.

At present it is hardly possible to orient our results with the observations of other workers. With one exception the criteria used here have not been previously employed. In regard to the results on the rate of urine secretion, those we have obtained are quite in accord with those obtained by Bronner and Schüller [4] on the normal human being.

SUMMARY

With our methods we have been unable to show any effect of diathermy on the rate of absorption of subcutaneously injected epinephrine or on the rate of absorption of subcutaneously injected phenolsulphonphthalein, unless edema was produced. In that case there appeared to be a distinct retardation in the rate of absorption.

Nor were we able to demonstrate any effect of diathermy on the rate of absorption of intramuscularly injected bismuth salts or on the rate of urine secretion.

4. Bronner, H., and Schüller, J.: München. med. Wchnschr. **74**: 1830 (Oct. 28) 1927.

A STUDY OF OBESITY

CIRCULATORY, ROENTGEN-RAY AND ELECTROCARDIOGRAPHIC INVESTIGATIONS *

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Obesity of late years has assumed great importance in the eyes of both the physician and the public. The problem is being discussed not only in the medical literature but also by insurance writers and the lay press. It has been statistically proved by Dublin,[1] Fisk [2] and others that the mortality rate of obese persons is higher than the average. Surgeons and physicians have known for years that the prognosis of a fat patient is poorer than that of a normal person when the former is subjected to the risks of an operation, of pneumonia, or of kidney or heart disease, and the condition has for a long time been associated with

TABLE 1.—*Weight and Symptoms* *

Case	Date	Blood Pressure	Pulse Rate	Weight	Headache	Dizziness	Dyspnea	Fatigue	Palpitation
I. A.	12/21/26	132/ 80	72	185	+	+	+	+	0
	7/12/27	122/ 80	76	165	+	+	0	0	+
J. A.	12/28/26	142/ 70	58	173	0	0	+	+	..
	7/26/27	120/ 72	60	143	0	0	0	0	..
B. B.	12/14/26	142/ 90	72	223½	+	+	..	..	..
	4/12/27	120/ 70	72	208½	0	0	..	..	..
R. F.	12/28/26	170/100	84	232	..	+	+	..	..
	7/ 5/27	140/ 84	72	203	..	0	0	..	..
F. F.	1/12/26	162/110	68	209	..	+	..	..	+
	6/ 8/26	140/ 82	82	177¾	..	0	..	..	0
B. F.	5/18/26	.....	..	152	+	+	+	+	+
	7/ 5/27	126/ 78	74	128	0	0	0	0	0
F. F.	10/26/26	146/ 96	100	216	+	+	+	+	+
	6/21/27	170/102	76	179½	0	0	+	0	0
A. G.	10/19/26	204/120	92	246	+	+	+	+	0
	1/11/27	158/ 90	72	226	0	0	0	0	0
J. K.	11/23/26	172/108	88	190	+	+	+	+	0
	7/12/21	142/ 86	70	160	0	0	0	0	0
I. K.	3/30/26	.....	..	158½	+	+	+	+	+
	4/12/27	134/ 70	76	120½	0	0	0	0	0
M. K.	3/ 1/27	150/ 80	80	159	+	0	0	+	0
	6/14/27	138/ 88	84	129½	0	0	0	0	0
R. L.	10/19/26	126/ 80	80	142	0	+	+	+	0
	5/ 3/27	112/ 78	82	119½	0	0	0	0	0
R. L.	2/15/27	166/ 94	76	178	+	+	0	+	+
	6/ 2/27	130/ 80	72	159	0	+	0	+	0
P. L.	10/ 5/26	152/ 90	95	157¼	0	0	0	+	+
	4/26/27	145/ 90	72	136¾	0	0	0	0	0
A. M.	12/21/26	132/ 80	76	195	+	+	+	+	+
	4/12/27	110/ 70	60	173½	0	0	0	0	0
M. O.	11/23/23	174/110	84	245	0	+	+	+	+
	2/ 8/27	194/124	84	236	0	0	0	0	0
D. P.	9/28/26	184/100	59	283	0	0	0	0	0
	7/ 5/27	128/ 78	72	224	0	0	0	0	0
F. P.	12/28/26	174/100	82	195¼	+	+	0	0	0
	7/19/27	132/ 80	68	160½	0	0	0	0	0
E. P.	5/12/26	152/ 92	95	....	+	+	+	+	+
	5/24/27	120/ 78	82	188¾	0	0	0	0	0
R. R.	11/23/26	156/ 98	78	171¾	0	0	+	0	0
	7/12/27	150/ 98	80	140¾	0	0	0	0	0
L. R.	5/17/27	196/ 92	64	228	+	+	+	+	0
	7/19/27	140/ 82	68	203	0	0	0	0	0
I. S.	1/ 4/27	170/110	88	168	+	0	0	+	0
	7/ 5/27	136/ 88	78	143	0	0	0	0	0
G. S.	7/27/26	130/ 80	60	154½	+	+	+	+	0
	7/19/27	126/ 76	62	129	0	0	+	0	0
A. S.	7/13/26	160/ 90	81	302	+	+	+	+	+
	7/12/27	114/ 70	52	211	+	+	+	+	+
L. T.	2/ 8/27	194/120	75	195	0	0	0	+	0
	6/14/27	156/ 88	64	173	0	0	0	0	0
K. W.	7/13/26	148/ 86	68	156	0	+	+	+	0
	7/19/27	128/ 70	66	138	0	0	0	0	0
J. W.	9/21/26	136/ 84	74	182	+	+	+	0	+
	1/18/27	138/ 80	86	157	+	0	0	0	0
P. W.	11/30/26	140/ 90	76	165	+	+	0	+	0
	1/11/27	120/ 84	72	155½	0	0	0	0	0

* Presence of a symptom is indicated by +; absence, by 0.

* From the Department of Medicine, Mount Sinai Hospital.
* Read before the Section of Medicine, New York Academy of Medicine, Dec. 18, 1928.

1. Dublin, L. I.; Fisk, E. L., and Kopf, E. W.: Physical Defects as Revealed by Periodic Health Examinations, Am. J. M. Sc. **170**: 576 (Oct.) 1925.

2. Fisk, E. L.: The Relationship of High Blood Pressure to Other Impairments, Am. Med. **18**: 446, 1923.

diabetes, hypertension and gallstones by such writers as Dublin,[1] Foster,[3] Joslin [4] and Preble.[5]

Obesity can no longer be looked on merely as a symptom or sign but must be considered as a disease in itself. Not only is the condition unesthetic, but the patient's efficiency, physiologically and economically, is distinctly impaired, whether the origin of the obesity is alimentary or endocrine.

The changes in the tissues in obesity have been fully described by McCallum [6] and others. The fat collects in the subcutaneous and intramuscular tissues, bone marrow, mesentery, omentum, retroperitoneal tissues, epicardium, kidneys and orbit. In very fat persons it penetrates the heart wall and appears underneath the endocardium.

As will be shown subsequently, this places a great strain on the circulatory apparatus. There is not only the load of fat, which may mean an extra weight of from 20 to 100 pounds (9 to 45 Kg.) or more carried about continuously, but there is also to be considered the elevation of the diaphragm and upward displacement of the heart, with the consequent mechanical interference with the normal heart action. The deposits of fat around the heart and even in the heart muscle not only are a mechanical disadvantage but probably cause profound physicochemical disturbances in the cell metabolism. Then, again, the fat deposits themselves require a blood supply and therefore increase the capillary bed of the body.

Whatever the factors involved, it is known that obesity is a disease with a slow onset, tending in the long run to shortness of breath, weakness and a decrease in the duration of life. Symptoms arise simulating those of myocardial failure, the most common being dyspnea, fatigue, palpitation, dizziness and headaches. Menstrual difficulties—even complete amenorrhea—sterility and sexual impotence are not uncommon.

Our object in this investigation was to determine the exact circulatory situation in cases of obesity. For this purpose roentgenograms of the heart were made and electrocardiograms taken. Blood pressures and pulse rates were studied at each visit of the patient. In order to test the functional capacity of the circulatory system, a simple exercise tolerance test was also used. A careful history was obtained, and urine examinations and basal metabolism tests were performed.

The subjects were all from an obesity clinic in charge of specialists in metabolism. The great majority did not have any ailment other than obesity, but came to the clinic solely because of overweight or the symptoms resulting therefrom. No treatment was employed except regulation of the diet to a lower caloric intake.

The series comprised ninety-one females and eight males, of ages varying between 10 and 58 years. Of these, the greatest number were between 35 and 50; eleven were below 17. The weights varied from 119 to 369 pounds (54 to 167 Kg.), the majority being between 170 and 225 pounds (77 and 102 Kg.).

SYMPTOMS AND SIGNS

A careful study of the patient's chief complaints and symptoms was made at each visit. The presence or absence of the five most common symptoms, dyspnea, fatigue, dizziness, headache and palpitation, were particularly noted.

As shown in table 1, in twenty-eight cases in which continuous histories were taken, and in which the average loss of weight was more than 30 pounds (14 Kg.), a distinct improvement was seen in some or all of the complaints. Indeed, twenty-two out of twenty-eight patients lost all their symptoms. Since no treatment other than regulation of diet was instituted, this would seem to show that the symptoms were due to obesity alone.

BLOOD PRESSURE AND PULSE RATE

Of the ninety-seven patients observed, sixty-five (67 per cent) showed a condition of hypertension—a systolic blood pressure of 150 mm. of mercury or more in persons over 30. The diastolic blood pressure was relatively less elevated than the systolic. The pulse rate was generally somewhat accelerated.

TABLE 2.—*Relation of Blood Pressure, Pulse Rate and Weight in the Obese (Illustrative Cases)*

Case	Age	Height Ft.	Height In.	Date	Ideal Weight	Actual Weight	Blood Pressure	Pulse Rate
J. A.	16½	5	2	12/28/26	115	173	142/ 70	58
				6/14/27	...	142	110/ 70	50
S. B.	39	5	3	5/ 4/26	127	243	164/106	80
				10/26/26	...	175	126/ 70	68
				1/18/27	...	188	140/ 90	82
E. C.	50	5	2	1/18/27	138	184	212/118	74
				4/ 5/27	...	171	166/ 98	68
G. F.	46	5	1	1/12/26	133	174	152/100	80
				9/28/26	...	153	130/ 76	75
R. F.	45	5	2½	12/28/26	137	232	170/100	84
				7/ 5/27	...	203	140/ 84	72
F. F.	37	5	4¼	1/12/26	136	209	162/110	68
				5/25/26	...	180	140/ 82	82
A. G.	39	5	5	10/19/26	142	246	204/120	92
				2/15/27	...	231	168/ 98	80
J. K.	45	5	7½	11/23/26	...	190	172/108	88
				6/ 7/27	...	162	138/ 80	74
M. K.	34	5	1	3/ 1/27	123	159	150/ 80	80
				6/14/27	...	129	138/ 88	84
R. L.	49	5	2½	2/15/27	139	177	166/ 94	76
				6/ 7/27	...	159	130/ 80	72
F. M.	46	4	8	12/ 8/25	115±	168	168/100	84
				6/ 8/26	...	152	124/ 80	80
I. P.	45	5		12/14/26	130	156	208/110	72
				2/29/27	...	132	170/100	84
O. P.	52	5	10	9/28/26	170	203	184/100	59
				7/ 5/27	...	224	128/ 78	72
F. P.	43	5	4	12/28/26	140	195	174/100	82
				7/19/27	...	160	132/ 80	68
E. P.	37	4	11	5/12/26	122	215	152/ 92	95
				5/ 3/27	...	189	120/ 78	82
L. R.	57	5	1	5/17/27	135	228	196/ 92	64
				5/24/27	...	222	210/120	72
				7/19/27	...	203	140/ 82	68
S. S.	30	5	1	5/ 2/26	130±	150	180/100	60
				6/29/26	...	133	144/ 90	63
I. S.	48	5	1½	1/ 4/27	136	168	170/110	88
				7/ 5/27	...	143	136/ 88	78
A. S.	36	..	..	2/ 9/26	130±	200	150/ 75	76
				4/20/26	...	185	128/ 70	76
A. S.	42	5	1	7/13/26	130	302	160/ 90	80
				7/12/27	...	211	114/ 70	52
D. T.	35	5	2	12/29/25	127	154	140/ 80	80
				11/20/26	...	138	124/ 70	74
M. U.	55	5	1	1/ 4/27	137	158	140/ 84	68
				2/15/27	...	138	124/ 78	62
N. W.	16	5	7	6/15/26	132	219	158/ 86	86
				7/13/27	...	204	124/ 84	76

The increase in blood pressure was more marked with a large increase in weight, thus proving a definite relationship between these two factors (table 1). In the older persons the elevation of blood pressure was particularly marked, being far above the figures for normal persons. It seems that with advancing years, or perhaps with a longer duration of the obesity, the blood pressure rises steadily (fig. 1).

With a reduction in weight there was a fall in both the systolic and the diastolic blood pressure, more marked in the former. It is of interest to note a simultaneous fall in the pulse rate in many cases (table 2).

3. Foster, N. B.: The Relations of Hypertension to Cardiorenal Diseases, Am. J. M. Sc. **164**: 808 (Dec.) 1922.
4. Joslin, E. P.: The Diabetic Problem of Today, J. A. M. A. **83**: 727 (Sept. 6) 1924.
5. Preble, W. E.: Obesity: Observations on One Thousand Cases, Boston M. & S. J. **188**: 617 (April 26) 1923.
6. McCallum, W. G.: A Textbook of Pathology, Philadelphia, W. B. Saunders Company, 1928.

In fifty-three patients whose average reduction in weight was from 25 to 30 pounds (11 to 14 Kg.), the systolic blood pressure was reduced on an average by from 25 to 30 mm. of mercury, the diastolic pressure by from 15 to 20 mm., and the pulse rate by about 15 to 20 beats a minute. In one patient, these factors fell with reduction in weight and rose again with a

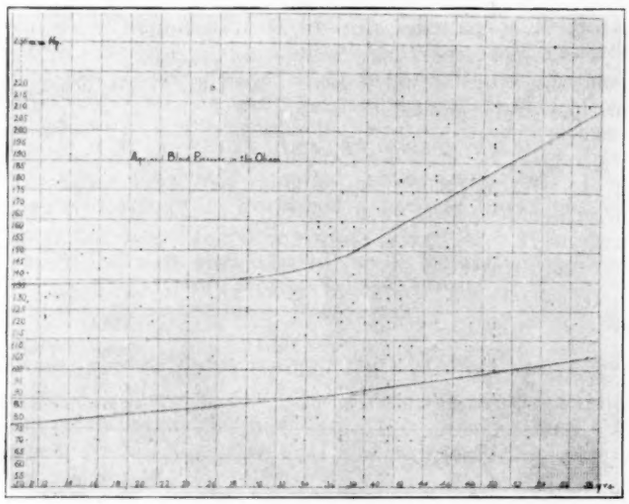

Fig. 1.—Rise of blood pressure with advance in years of obesity: upper curve, systolic blood pressure; lower curve, diastolic blood pressure.

gain of weight (S. B., table 2). These results confirm the previous observations of Bauman,[7] Dublin, Fisk and Kopf,[1] Fisk, [2] Foster,[3] Rose [8] and Terry.[9]

EXERCISE TOLERANCE TEST

The functional test was one that has recently been described by us.[10] It consists of walking up and down two steps of known height (9 inches, or 23 cm.), so that the amount of work performed can be easily calculated from the weight of the patient and the number of ascents. The "ideal" or average weights for persons of the same sex, height and age as our obese patients were obtained from the medical actuarial tables.[11] From our published tables one can read the number of foot-pounds of work per minute that the normal person should be able to perform (according to sex, age, weight and height) with a return of the blood pressure and pulse rate to the resting level within two minutes. If the blood pressure and pulse rate take longer to return to rest, the individual is below normal efficiency. The actual capacity in terms of the number of foot-pounds of work for our obese patients was found by making them climb the steps for a minute and a half, the number of ascents being regulated so that the blood pressure and pulse rate returned to the resting figure within two minutes of the cessation of exercise.

Fig. 2.—Typical enlarged heart of an obese patient: Left ventricle hypertrophied; lower left border of heart hazy; a good deal of pericardial fat present: diaphragm elevated.

It was found that the obese are far below the average in the number of ascents that they can make (table 3). Moreover, even when one takes into account the extra weight carried and calculates the actual number of foot-pounds of work done in each case, it is found that the work tolerance of the fat person is distinctly below the normal. Signs of distress, dyspnea and even cyanosis appeared frequently, even when much less work was done than could be performed with ease by the average person. In all, forty-eight obese patients were tested and of this number thirty-six, or 75 per cent, were definitely below the average in work tolerance. The greater the overweight, the less work accomplished (table 3).

In twelve cases out of forty-seven, or 26 per cent, there were normal reactions to the exercise tolerance tests, or reactions even higher than the average. Of the twelve patients, ten were 30 years of age or younger; in other words, the obese woman under 30 actually performs more work than the ordinary person. Her added weight appears to give her a quantitative

Fig. 3.—Effect of reduction of weight in an obese patient.

advantage over the average person of the same age and height but of ideal weight (table 3). It is interesting to note that these results agree with the statements of insurance companies that a slight overweight in young persons is an advantage.[11] In persons over 30, however, obesity is associated with a distinct loss in circulatory efficiency.

Twenty-one patients were tested for capacity to do work as they lost weight. In eighteen cases, or 86 per cent, the efficiency increased as the weight diminished. In a few cases in which the patient regained lost weight, the exercise tolerance again fell below normal (table 3).

TABLE 3.—*Exercise Tolerance Test in Obese as Compared with Normal Persons*

Case	Age	Height	Normal Weight	Actual Weight	Normal Work, Ft.-Lbs.	Actual Work, Ft.-Lbs.	Normal Weight Ascents	Actual Ascents
J. A.	16½	5 ft. 2 in.	115	163	2,720	2,750	24	17
				154		3,100		20
				145		3,200		22
A. S.	42	5 ft. 1 in.	130	269	2,700	1,400	21	5
				262		2,000		8
				211		2,500		12
D. T.	35	5 ft. 2 in.	127	188	2,770	2,420	21	13
				140		2,800		20
				147		2,500		17
				149		2,500		17

7. Bauman, Louis: Obesity: Recent Reports in the Literature and Results of Treatment, J. A. M. A. **90:** 22 (Jan. 7) 1928.
8. Rose, R. H.: Weight Reduction: Its Indications in High Blood Pressure, Am. Med. **18:** 418, 1923.
9. Terry, A. H.: Obesity and Hypertension, J. A. M. A. **81:** 1283 (Oct. 13) 1923.
10. Master, A. M., and Oppenheimer, Enid T.: A Simple Exercise Tolerance Test for Circulatory Efficiency, Am. J. M. Sc. **177:** 223 (Feb.) 1929.
11. Medico-Actuarial Mortality Investigation, compiled by the Association of Life Insurance Medical Directors and the Actuarial Society of America **2:** 12, 1913; **1:** 38, 67, 1912.

X-RAY IN OBESITY

Teleroentgenograms were taken in seventy-three cases. It is indeed a distinctive picture that the roentgenogram presents in obesity. The diaphragm is elevated, the heart is widened in a horizontal direction, and the apex is displaced outward to the left. In all, the heart appears enlarged and the left ventricle hypertrophied. The apex, or the lower portion of the left border of the heart, is hazy in outline, owing to the presence of apical pericardial fat (figs. 2 and 3*A*). Table 4 gives a summary of the roentgenographic observations. The obese patient is a sthenic or hypersthenic person, and this characteristic in the roentgenogram was noted in 84 per cent of the cases. In fully 51 per cent of these "normal" obese cases, i. e., cases in which no disease or ailment other than obesity was present, the heart was enlarged. That is, the total transverse diameter of the heart was more than half of the maximum internal thoracic diameter. This enlargement is probably more apparent than real, in that it is due to the elevation of the diaphragm by the abdominal fat. This also probably explains the "hypertrophy" of the left ventricle in 85 per cent of our cases. The diaphragm was distinctly elevated in 78 per cent of the cases and apical pericardial fat was plainly discerned in 77 per cent. With loss of weight the characteristic changes in the roentgenogram disappear (fig. 3).

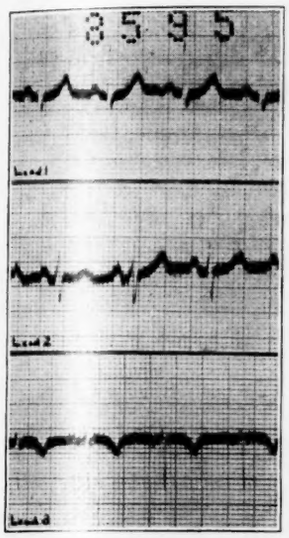

Fig. 4.—Typical electrocardiogram in obesity; i. e., left ventricular preponderance with inversion of P and T waves in third lead.

ELECTROCARDIOGRAMS

Electrocardiograms taken in ninety-seven cases showed definite characteristic changes. Fully 87 per cent showed a left ventricular preponderance, which not only is far beyond the number found in ordinary adults but, for the age groups studied, is an unusually high figure. A change in the P and T waves in the third lead was very common; these waves were either flat (iso-electric) or inverted. The changes in the P waves occurred in 70 per cent and in the T waves in 87 per cent of the cases (fig. 4 and table 5). The heart rate varied a good deal, being usually between 75 and 95 beats per minute. Sinus arrhythmia is very common in obesity, occurring almost as frequently as left ventricular preponderance.

Repeated electrocardiograms were taken as the patient lost weight. Of fifteen patients whose average loss in weight was 32 pounds (15 Kg.), all but two showed a return toward a normal electrocardiogram; that is, a change from inverted or flat to normal P and T waves, and a loss or diminution of the left ventricular preponderance (fig. 5).

SUMMARY

1. The obese person usually complains of dyspnea, fatigue, palpitation, dizziness and headache. With a loss of weight, the only treatment being a reduction of the caloric intake, these symptoms disappear.

2. Sixty-seven per cent of the cases showed hypertension. An accelerated pulse rate is commonly present. In general, the more the overweight, the greater the hypertension. With loss in weight, a corresponding fall in the blood pressure and pulse rate occurred.

3. With advancing years, the blood pressure of obese patients increases. Apparently, the longer the duration of the obese condition, the higher the blood pressure.

TABLE 4.—*Roentgenographic Changes in Obesity*

Number of Cases	Sthenic Habitus	Enlarged Hearts	Left Ventricle Hypertrophy	Diaphragm Elevated	Apical Pericardial Fat	Widened Aorta
73	84%	51%	85%	78%	77%	18%

4. The exercise tolerance of the obese person over 30 years of age is below that of the normal person of the same sex, age and height. The normal person shows few or no symptoms of discomfort during the test, while in the obese such symptoms as dyspnea, cyanosis and fatigue are quite common. With reduction in weight the patient's exercise tolerance increases.

TABLE 5.—*Electrocardiographic Changes in Obesity*

No. of Cases	Heart Rate	Sinus Arrhythmia	Left Axis Deviation	Total P_3 Changes	Total T_3 Changes
97	75-95	90%	80%	70%	87%

5. Under 30 years of age the obese are somewhat more efficient than the average, suggesting that a moderate overweight in the young is a slight advantage.

6. The roentgenograms show a sthenic, or hypersthenic, habitus, elevation of the diaphragm and an enlarged widened heart, with a hypertrophied left ventricle and a hazy lower left border obscured by apical pericardial fat. With reduction in weight these characteristic signs disappear.

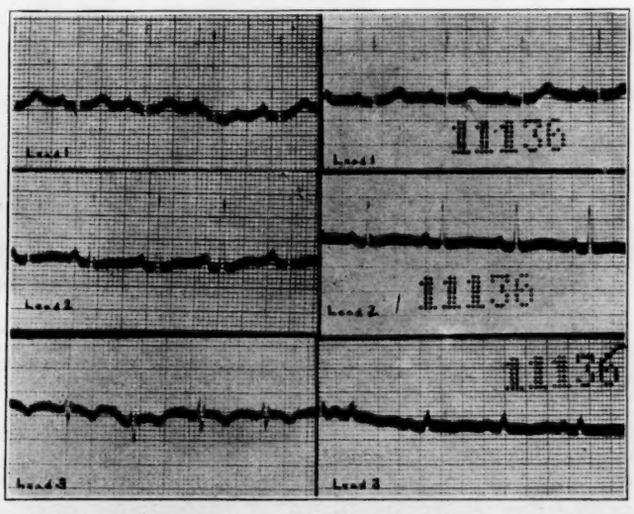

Fig. 5.—Disappearance of left ventricular preponderance, and change in P and T waves of third lead on loss of 38 pounds (17 Kg.).

7. The electrocardiograms in obesity show a sinus arrhythmia, left ventricular preponderance, and inversion of the P and T waves in lead III. With loss in weight, these changes disappear.

8. It is clear, therefore, that there exists in the obese person a distinct circulatory embarrassment, as proved by the abnormalities of the blood pressure, pulse

rate, roentgenogram and electrocardiogram, and by the diminished capacity for work. It is not difficult to understand why the fat person is a poor surgical risk, and why his mortality in pneumonia, nephritis and heart disease is higher than the average.

9. These facts give ample explanation for the distinct improvement commonly observed on reduction in weight in patients with valvular disease of the heart, hypertension and coronary artery disease.

124 East Sixty-First Street.

LONGITUDINAL OSTEOTOMY*

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SAN FRANCISCO

The ideal osteotomy is one in which the existing deformity is corrected with a minimal displacement of the fragments. In spite of extreme care in performing transverse osteotomy, there may take place a considerable malalinement of the ends of the bone. This accident may cause a delay in the union, necessitate manipulation under anesthesia, or, in extreme cases, require surgical intervention.

In an endeavor to insure better results after osteotomy, a procedure was instituted which depends on the principle that if a series of longitudinal osteotomies are made about the circumference of a bone, they will so weaken the structure that it will yield in any direction to bending or twisting forces, and still maintain the continuity of the bone.

METHOD OF MAKING LONGITUDINAL INCISIONS IN THE BONE

An incision about 5 cm. in length is made through the skin over the site selected for correction. The incision is carried down through the fat and fascia, and if muscle is encountered the fibers are spread by blunt dissection. The periosteum is then incised and deflected fully to each side. With an osteotome a longitudinal cut of from 3 to 4 cm. is made through the entire thickness of the cortex of the bone. On each side of the first cut, at a distance of about 1 cm., two parallel cuts of the same length are likewise made through the cortex. The circumference is then followed about 1 cm. from the last two incisions to the opposite surface, where two similar longitudinal incisions are made into the bone. The osteotome may then be reinserted into the first cut and driven into the diametrical portion of the shaft. Thus there are five (or six) longitudinal cuts into the bone, extending around the circumference at fairly equal intervals.

Fig. 1 (case 1).—External rotatory deformity of the right tibia before operation: Anteroposterior view. Diagrammatic incisions into the cortex.

Fig. 2 (case 1).—Anteroposterior and lateral views of the right tibia in plaster three days after rotation operation. Attention is called to the twisting of the longitudinal segments and to the fact that there is no displacement of the fragments.

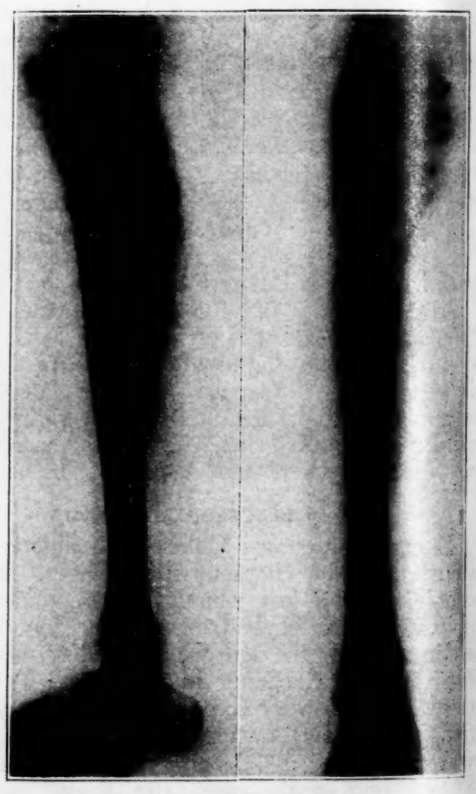

Fig. 3 (case 1).—Forty-nine days after operation. Site of osteotomy can hardly be distinguished at this time.

The bone, after this procedure, should be sufficiently weakened to yield to a bending force applied in any direction. Each longitudinal section of bone between the osteotomies gives way as a separate unit, without loss of continuity, as in a greenstick fracture. Likewise, if one applies a twisting force, the individual strands tend to rotate like the strands of a piece of rope. In this way a rotatory deformity may be corrected. With a combination of lateral bending and twisting at the same time, both lateral deviation and rotation may be corrected. It will be noted that, after the deformity has been corrected,

* From the Shriner's Hospital for Crippled Children.

the fragments remain in the new position without a tendency to relapse.

The wound is closed in any manner the operator wishes, and a plaster dressing is applied to maintain the correct position of the bone.

REPORT OF CASES

CASE 1.—R. A., a boy, aged 7½ years, was diagnosed as having external rotatory deformity of the tibia, a sequel to anterior poliomyelitis.

At operation, multiple longitudinal incisions, 3 cm. long, were made into the cortex at the upper end of the tibia below the proximal epiphyseal cartilage plate. The lower fragment was then rotated inward, so that the axis of the knee and the ankle joints were in a parallel plane. A plaster dressing was applied and allowed to remain for forty-six days. A roentgenogram

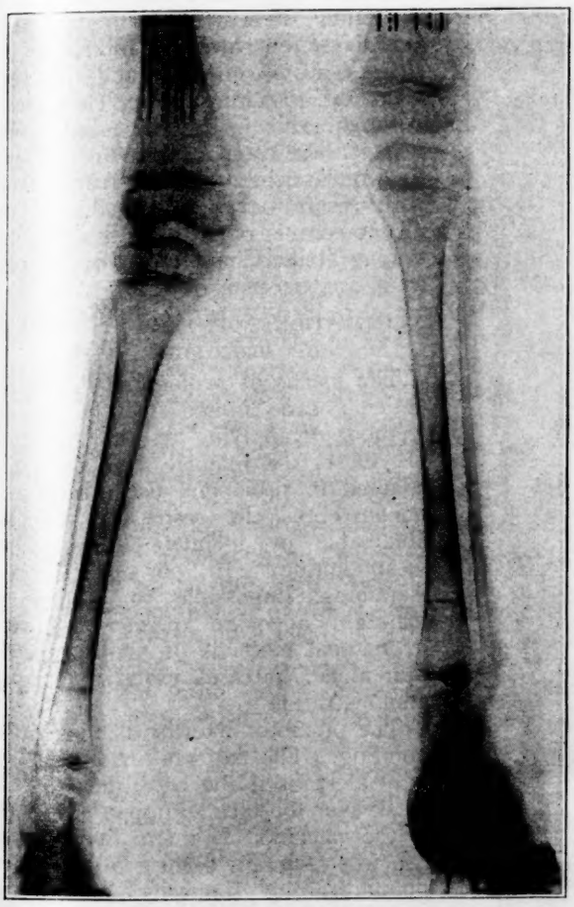

Fig. 4 (case 2).—Bilateral genu valgum. Diagrammatic outline of the osteotomies.

taken at the end of this period showed complete bony union, and the site of the osteotomy could hardly be detected (figs. 1, 2 and 3).

CASE 2.—M. C., a boy, aged 5½ years, had bilateral genu velgum, a sequel to anterior poliomyelitis.

At operation, multiple parallel longitudinal osteotomies were made into the cortex on both sides, above the distal epiphyseal plate of the femur. Then an inward thrust was made on the lower fragment and leg, the bone yielding at the site of operation. The deformity was slightly overcorrected and the position maintained by a protective plaster. The plaster dressing was removed at the end of twenty-four days. Union at this time was firm, but a new plaster cast was applied to insure complete consolidation (see figs. 4, 5 and 6).

CASE 3.—R. P., aged 5 years, had genu valgum combined with external rotatory deformity of the left tibia.

At operation, multiple longitudinal osteotomies of the tibia were made, just below the proximal epiphyseal plate. By making strong inward pressure on the lower fragment, the genu valgum was corrected. Next, by twisting the lower fragments inward, the rotation was eliminated. A plaster dressing was then applied to keep the bone in the desired position (figs. 7 and 8).

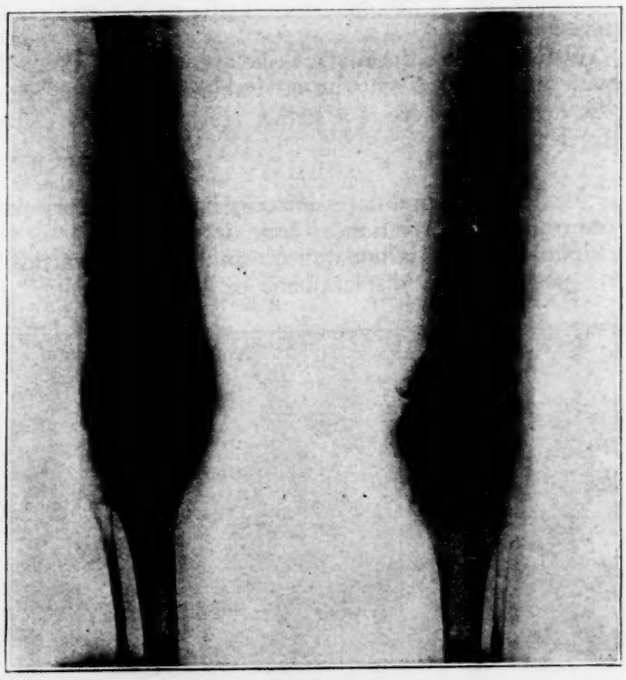

Fig. 5 (case 2).—Twenty-four days after the operation, showing correction of the deformity. Attention is called to the advanced stage of the union, which was clinically firm.

Fig. 6 (case 2).—Lateral view of the right leg showing the absence of posterior displacement so often seen after osteotomy of the lower end of the femur.

COMMENT

The method used here has not been attempted in an adult. It is possible that with a large bone it may be necessary to increase the number of longitudinal incisions or to supplement them with short cross incisions.

Osteotomy of the fibula is not required in the ordinary case, but it may be advisable in an adult or in the event that there is a strong resistance to corrective force.

SUMMARY

Multiple longitudinal osteotomy is a satisfactory procedure in the correction of bone deformity.

The operation is not difficult and there is practically no postoperative displacement of the fragments. In addition to these advantages, the fragments tend to remain in position after correction and the length of time needed for healing is reduced.

210 Post Street.

Fig. 7 (case 3).—Anteroposterior view of the left leg (before operation) showing genu valgum associated with external rotatory deformity.

Fig. 8 (case 3).—Anteroposterior and lateral views after operation to correct rotation and genu valgum. Attention is called to the narrowing of the diameter of the bone where it was twisted at the site of osteotomy. There is no shifting of the fragments in spite of a combination twist and thrust done at the same time.

Health Movements.—It is not claiming too much when it is claimed that virtually all worth-while health movements have first emanated from the medical profession. Practically all legislation in the interests of public health has been conceived in the medical mind, promulgated by medical men, and crystallized into law by the efforts of organized medicine. Laws for the purpose of requiring persons to meet certain educational tests and qualifications before engaging in the practice of the healing art are public health measures, as they are primarily for the purpose of protecting the public against unqualified practitioners, quacks, and charlatans.—Wilson, W. H.: The Medical Profession, Public Health, and the Public, *Nebraska M. J.*, May, 1929.

THE USE OF A NEW APPARATUS FOR THE PROLONGED ADMINISTRATION OF ARTIFICIAL RESPIRATION

I. A FATAL CASE OF POLIOMYELITIS*

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AND
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A number of patients have come under our observation who have shown intercostal paralysis and considerable weakness of the diaphragm early in the paralytic stage of anterior poliomyelitis; yet the accessory muscles and the diaphragm have been able to support sufficient respiratory movement to keep the patient alive until, in the course of a few days, the paralyzed intercostal muscles began to improve and the patient went on to almost complete recovery. Although this is not the usual termination of these cases, it occurs often enough to stimulate the desire to give all patients with respiratory paralysis this opportunity to recover normal breathing by maintaining artificial respiration over a period of hours, or even days.

LIMITATIONS OF PRESENT METHODS OF PROLONGING LIFE

The means of prolonging life in these patients are limited to the available methods of applying artificial respiration. Of these, the manual methods are not adapted to prolonged use. In cases of poliomyelitis, the respiratory excursion obtainable by manual efforts is most disappointing. In our experience, it is almost impossible to produce and maintain adequate oxygen interchange by manual methods of artificial respiration alone, in cases requiring long-time administration.

The pulmotor likewise has been disappointing. The patients are usually mentally alert until the end; they fight any mask over the face and oppose the efforts of the machine. In one patient, in whom life was maintained for two days by the pulmotor, the stomach and esophagus were ruptured and gastric contents were present in large amount in the mediastinum. The terminal efforts of this child had opened the esophagus rather than the trachea to the forceful inrush of air.

The failure of the present methods of administering artificial respiration has led to the demand for a mechanical device which would obviate these difficulties. In order to prove satisfactory, such an apparatus must be capable of working steadily over a long period of time; it must be adaptable to individuals of various ages and sizes; it must be so constructed that the rate and depth of respiration can be controlled; lastly, and most important, it must be capable of producing adequate artificial respiration without discomfort or harm to the patient. The machine devised by one of us

* From the Department of Ventilation and Illumination, Harvard School of Public Health; the Children's Hospital of Boston, and the Department of Pediatrics, Harvard University Medical School.

and described briefly here seems to fulfil these requirements.[1]

THE MECHANICAL RESPIRATOR

The artificial respiration tank (fig. 1) consists of a cylinder 1.68 meters (66 inches) long and 0.56 meter (22 inches) in diameter. It is large enough to accommodate a man of 1.94 meters (6 feet 4 inches) weighing about 102 Kg. (225 pounds), but in an emergency it can be used for a small child.

The patient lies on a mattress placed on a truck which is attached to the lid of the tank. The head and neck of the patient extend beyond the lid through a rubber collar, the head resting on a stand of adjustable height outside the tank. The patient is rolled into the tank as soon as the collar has been adjusted and the position of the head determined. The lid and truck of the tank can be pulled in and out with ease to permit occasional examination of the patient. All of these motions can be accomplished very rapidly.

By means of electrically driven blowers, alternate positive and negative pressures are applied to the air within the tank. Inspiration is caused by negative pressures and expiration by positive pressures in a manner that seems to be physiologically normal. The pumps (fig. 1) which supply the pressures are capable of producing any pressure combination up to about ± 60 cm. of water.[2] These pressures greatly exceed those required to induce deep breathing in normal adults, in curarized animals or, as in the present case, in a child suffering from intercostal paralysis as a result of acute anterior poliomyelitis. In a normal individual, pressures greater than about ± 15 cm. of water produce marked overventilation. In curarized animals[3] we have found that alternate pressures of about 8 to 10 cm. are adequate.

The rate at which the pressure alternations take place is controlled by a rheostat and variable speed motor. Respiratory rates varying from 10 to 40 a minute can be obtained. The amount of the pressure is controlled by a valve which throttles down the air flowing to and from the pumps.

Since the respiration tank is equipped with a valve at the foot-end, this valve can be shut off and the body of the patient will then be enclosed in an air-tight cylinder. The apparatus thus becomes a true plethysmograph and, if it is connected to a suitable spirometer, records of breathing (fig. 2) can be made without the use of any sort of mask, nose piece or mouth piece. It is therefore a simple matter to close off the tank and, using it as a plethysmograph, to determine to what extent the patient is able to resume normal breathing. In cases like that reported here, this procedure is clinically very useful.

REPORT OF CASE

B. R., a girl, aged 8 years, was admitted to the Children's Hospital of Boston, Oct. 12, 1928, because of an illness of three days' duration. She had been taken sick with fever, headache, and stiffness of the neck and back. On the day of admission she was noted to have a weakness of the left arm and some difficulty in respiration. Examination showed part of the intercostal muscles to be paralyzed. The spinal fluid observations confirmed the diagnosis of poliomyelitis. Because of the persistence of fever, spread of the involvement was anticipated and the apparatus was made ready for the application of artificial respiration.

On the afternoon of October 13, it was apparent that respiration would fail in a few hours. The diaphragm was functioning, but the intercostal and pectoral muscles were completely paralyzed. In order that she might become accustomed to the procedure, the patient was placed in the respirator at 4 p. m. on that day and the pumps were run at low pressures. Records of the respirations at this time were fairly good and she was really in no need of assistance (fig. 2).

On the morning of the 14th at 6 a. m., the patient became dangerously cyanotic, apparently from weakness or fatigue of the diaphragm. She was quickly put into the respiration tank with the pumps running at approximately 30 cm. negative and 15 cm. positive pressure. In a few minutes, her normal color had returned and she tried to talk. At that time, she had not learned to accommodate her efforts at speech to the pressure alternations. She soon was able to do so and learned also to clear her throat and cough with the help of the machine, acts most difficult for her outside the tank.

After three and one-half hours the patient was much improved and asked to be put back to bed. The pumps were stopped and the rubber collar was partly released. A little later the patient was removed to her bed and it was not necessary to put her into the respirator again until 4 p. m. of the same day. From

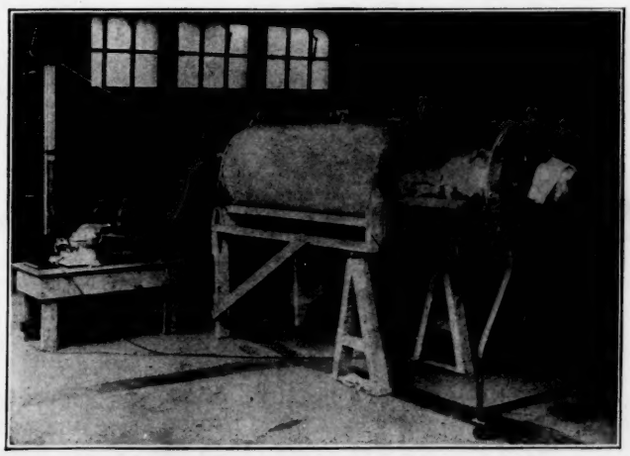

Fig. 1.—The mechanical respirator, showing patient ready to be pushed into the tank. The pumps and manometer for controlling the pressure are shown in the background, to the left.

that time until her death at 8 a. m., October 19, she was never completely removed from the respirator, nor was the rubber collar released. The maximum time that she was able to breathe by herself without becoming cyanotic diminished rapidly from one or two hours to periods varying from three to fifteen minutes. The administration of artificial respiration did not prohibit her from sleeping or taking nourishment.

The diaphragm functioned weakly throughout the entire time; apparently the machine relieved her efforts and rested this muscle sufficiently for it to maintain her during the short periods she was out of the tank, when she usually breathed at a rate of about 35 respirations a minute.

Physical signs of pneumonia appeared on the right side and became progressively more marked. After the onset of the pneumonic process, it was found best, before sliding the patient out of the tank for washing and changing, to run the pumps at approximately 30 cm. negative and 8 cm. positive pressure, at the same time allowing her to breathe about 50 per cent oxygen.

After two minutes of this regimen, she was taken out of the respirator, the oxygen treatment being continued. Even so, she became cyanotic in a few minutes and had to be put back. The pumps were then run at from 22 to 28 cm. negative and from 6 to 8 cm. positive pressure. When the color improved, the pressures could usually be reduced to 16 cm. negative and 8 cm. positive pressure.

1. A detailed description of this apparatus with physiologic studies, by Philip Drinker and L. A. Shaw, will shortly be published. Its development through the experimental stage was made possible by the generosity of the gas and electric companies affiliated with the Consolidated Gas Company of New York through its Committee on Resuscitation and Related Activities.

2. On normal adults, we have produced experimentally pressures of ± 75 cm. of water. Clinically such pressures probably have no application, as they quickly produce deep apnea and are very unpleasant.

3. Shaw, L. A.: Unpublished data.

As the pneumonia became more marked, it was evident that the patient required greater pressure variations and, when taken out of the tank, she often asked to be put back again. In her own words, she could "breathe bigger" in the tank than outside it. If the negative pressure fell below about 16 cm., she generally asked us to "run it more."

Her color remained good and she was conscious and alert until a few moments before her death, which appeared to be due to cardiac failure.

Necropsy was performed and showed a normal left lung, without emphysematous areas or ruptured alveoli. The right lung was the site of an extensive bronchopneumonia, largely in the stage of gray hepatization. The unilateral distribution opposed the idea that the pneumonia was hypostatic. Neither lung showed any evidence of trauma due to overinflation. Had trauma occurred, it would certainly have been apparent at least in the right lung. The spinal cord showed widespread lesions characteristic of poliomyelitis. However, the edema had subsided and there is reason to suppose that under these circumstances this child would not have regained the use of the chest muscles, had life been maintained longer.

COMMENT

The normal respiration of a child of 8 years is about 18 a minute; we therefore ran the pumps to give from eighteen to twenty-four pressure changes, or breaths, a minute. Although this rate seemed to be satisfactory in this case, we believe that the optimum respiratory rate will vary somewhat with each patient and that it will always be higher for children than for adults.

The reason we used negative pressures (inducing inspiration) that were sometimes two or three times as great as the positive was to keep the rubber collar from rubbing against the child's chin. On positive pressure (expiration) the collar bulges out and, although this does not annoy an adult, a child's neck is relatively shorter and the chin, therefore, rubs against the collar. In the new tank now being constructed especially for children, this difficulty will be eliminated.

We experimented with different pressure combinations as much as could safely be done, but the child's condition was always critical and it seemed best, therefore, to run the pumps at the pressure combinations which we could see were satisfactory. The pressures were kept down to the lowest limits possible without producing discomfort or anoxemia.

A mechanical respiration device known as the "barospirator" has recently been described by Thunberg.[4] It was used by him and his associates in a fatal case of poliomyelitis[5] with results not unlike those we have recorded in this paper. With his apparatus, the patient is entirely enclosed in a metal tank. By means of a large electrically driven pump, the pressure within the tank is changed positively and negatively at the desired rate to the extent of about 55 mm. of mercury (75 cm. of water). Under these conditions, the lungs of the average person are aerated without any lung or chest movement whatever and the volume of gas exchange varies directly with the pressure changes.

We believe that these two instances of the administration of artificial respiration to patients suffering from respiratory failure due to anterior poliomyelitis are sufficient justification for future clinical treatment of similar cases in this manner and that they support the hope that in certain of these cases prolonged application of artificial respiration may bring the desired result.

The facts brought out in this paper should not be construed to mean that the mechanical respirator here described can in any way displace the Schäfer prone pressure method of artificial respiration for emergency resuscitation and rescue work in the field. As a relatively complicated and nontransportable apparatus, it is at present a purely clinical tool, to be placed in hospitals in the hands of competent clinicians.

SUMMARY

A clinical test of a new apparatus for the administration of artificial respiration over prolonged periods indicates that it fulfils the desired clinical requirements. Artificial respiration was maintained almost continuously for 122 hours in a girl, aged 8 years, suffering from acute anterior poliomyelitis, without discomfort or apparent harm to the patient. Administration of artificial respiration did not prohibit sleeping or the taking of nourishment.

Death was believed to be due to cardiac failure. Examination of the lungs of the patient after death did not show any evidence of trauma due to overinflation.

55 Van Dyke Street, Boston 17.

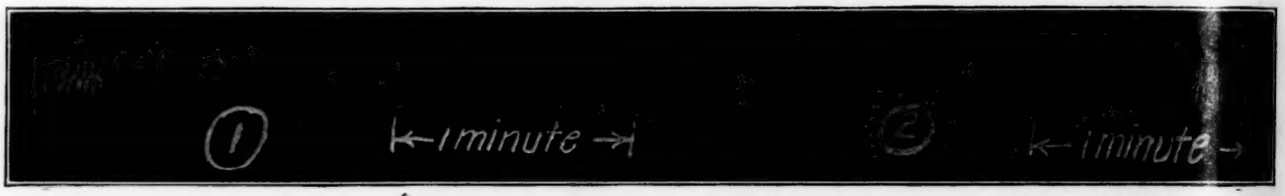

Fig. 2.—Records of patient's respiratory movements: (1) on the evening of October 13, eleven hours before the administration of artificial respiration was required; (2) on the morning of October 15, when respiration was weak and wholly diaphragmatic. Attention is called to the absence of the occasional deep breaths seen in 1.

4. Thunberg, T.: Der Barospirator: Ein Apparat für küunstliche Atmung nach einem neuen Prinzip, Abderhalden's Handbuch der biologischen Arbeitsmethoden, 1927, section 5, part 1, p. 561.

5. Petrén, K., and Sjövall, E.: Eine Studie über die tödliche akute Form der Poliomyelitis, Acta med. Scandinav. **64**: 260, 1926.

The Desire to Help.—The character and honor of the profession are the foundation stones of the whole structure of medicine. This structure has been erected on the conviction that doctors are concerned in giving unselfish service to the public. This is our sole title to whatever of peculiar distinction we may enjoy. We are assailed on every side by the temptation to become rivals of those who worship at other altars. Particularly is this so in a large wealthy community like ours, where material advancement yields such patent rewards. Strength of character and an abiding faith in things not seen are required to guide one's footsteps along the paths that have been laid out by the great and good men of the past. One such, whom I just quoted, defines the star which leads us along the path as the "improvement of man, both individually and collectively." Unless we can find satisfaction and reward for a life of hard work and, more often than not, real sacrifice in the consciousness of striving toward such a star, we cannot hope to enjoy the high esteem that has been accorded to our leaders in the past. No brilliance of intellect, no accomplishment of mind, no accumulation of wealth has ever elevated any physician to be the respected and beloved colleague of the profession, or the idolized friend of his fellow men, unless these have been associated with a devotion that places a desire to help above them all.—Hartwell, J. A.: Presidential address before the New York Academy of Medicine, Jan. 3, 1929.

PROTOZOAL INFESTATIONS OF EX-SERVICE MEN IN MINNESOTA

ANALYSIS OF TWO HUNDRED AND SIX CASES *

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MINNEAPOLIS

That infections with *Endameba histolytica* are widespread among ex-service men in the North Central states and that they play an important rôle in various obscure intestinal complaints, neurasthenias and dermatitides is a view that has gained much credence within the last few years.

To a considerable degree, interest has been stimulated recently by the work of Dr. T. D. Tuttle [1] who, in 1925, reported the finding of *Endameba histolytica* in 100 of "less than 1,000 cases admitted to the general medical ward" of U. S. Veterans' Hospital No. 65 at Minneapolis over a period of twenty months.

The ground for accepting this report as applicable to the group of ex-service men in this region as a whole had been cleared by the early postwar suggestions that a widespread increase of amebic dysentery in this country would probably result from the return of American soldiers from Europe. Moreover, the important work of Sistrunk (1911), Giffin (1913) and Sanford [2] at the Mayo Clinic had served to emphasize not only that amebic dysentery is a tropical disease but also that the possibility of such infections occurring in Minnesota and the neighboring regions must be taken into account.

If the observations of Tuttle [1] are to be accepted as typical of the situation in the North Central states, it is obvious that they have an important bearing on public health as well as on questions of disability and compensation of ex-service men. The presence of a large number of carriers in a region in which cases have been shown by ample evidence to originate affords the early suggested opportunities for spread of the infection among the civilian population.

From the point of view of the parasitologist there was a significant omission in the available data in that they failed to discriminate between the species of amebas involved, beyond the point of grouping them as *histolytica* or *coli*. There are at least five species of endamebas of man. However much difference of opinion there may yet exist as to the effect of some of these on their host, it is no more logical to include them all in two groups than for a student of enemies of fish to group all ducks into mergansers and mallards. If the two ducks mentioned could be distinguished only with difficulty, the illustration would be the more apt.

For these reasons, a further study of the incidence of protozoal and, particularly, amebic infections of ex-service men in this section of the country seemed very desirable. Opportunity for such a study was afforded through the courtesy of Dr. Philip B. Matz, chief of the research subdivision of the United States Veterans' Bureau, Dr. H. B. Fralic, medical officer in charge of Veterans' Hospital No. 106 at Fort Snelling, Minn., and Dr. Floyd Grave, in charge of its clinical laboratory, who cooperated in the work. Acknowledgment is also due to a number of advanced students in the department of zoology of the University of Minnesota for painstaking aid in the study of the prepared slides.

At the outset a number of miscellaneous examinations were made which do not enter into this preliminary report. Since January, 1928, 162 positive cases exhibiting 206 protozoal infections have been critically studied. Roughly speaking, these represent 500 cases referred to the clinical laboratory of the hospital for microscopic examination of the feces. Each patient was subjected to at least three examinations on successive days, if positive results were not secured earlier. It should be stated, too, that this group included only those who exhibited gastro-intestinal, neurasthenic or other symptoms which were believed to make a stool examination desirable.

The stools were passed at the hospital, after saline catharsis, and were examined immediately. There is no question that vegetative forms of amebas are most readily noted in the fresh preparation and, in typical cases, can be determined as to species by an experienced worker. However, in the average clinical laboratory time does not permit an exhaustive study of the individual cases immediately and, in any event, properly fixed and stained preparations afford important data supplementing those gained from examination of the living organisms. For these reasons only provisional determination of species was made, in most cases, from fresh material. For more thorough study, two or more smears were made promptly, fixed in warm Schaudinn's fluid, and stained in iron hematoxylin. The slides so prepared were studied in detail by me and were subjected to a rigid examination by a group of advanced students, whose results were checked. A result of this extended search is to be seen in the number of multiple infections reported. It should be pointed out that under these conditions of study the chance of overlooking infections found in the fresh stool examination alone was slight, while many infections were noted which had escaped attention in the first examination.

In comparing the results to be presented with those available in the literature, there are two important considerations to be kept in mind. In the first place, most of our data regarding the incidence of intestinal protozoa of man in this country are based on studies which have been made primarily in the Southern states or border states or in California. Such are the studies of Kofoid,[3] Stiles, Boeck,[4] Hegner, Lynch [5] and others. Secondly, as has already been noted, many of the studies dealing with situations more comparable to those of Minnesota make little or no distinction between species of ameba or even genera of flagellates. Thus, as late as 1918, a suggestive study of 1,000 stools listed twenty-seven as positive for *Endameba* distributed as follows: *"histolytica* stage, seventeen, *tetragena* stage, six, unclassified, four."

The results of the study of the 162 positive cases, showing 206 infections, are as follows: In ninety-

* From the Department of Zoology, University of Minnesota.

1. Tuttle, T. D.: A Report of One Hundred Cases of Amebiasis Observed at U. S. Veterans' Hospital No. 65, Minnesota Med. **8**: 13-19 (Jan.) 1925.

2. Sanford, A. H.: The Geographic Distribution of Amebiasis, J. A. M. A. **67**: 1923-1926 (Dec. 23) 1916.

3. Kofoid, C. A., and Swezy, Olive: On the Prevalence of Carriers of Endamoebae Dysenteriae Among Soldiers Returned from Overseas Service, New Orleans M. & S. J. **73**: 4-11 (July) 1920.

4. Boeck, W. C.: The Incidence of Amebiasis and Its Relation to the Carrier Problem, U. S. Vet. Bur. M. Bull. **4**: 744-751, 1928.

5. Lynch, K. M.: The Flagellated Protozoa of the Intestine: A Specific Analysis of the Conditions Related to Their Presence, Am. J. Trop. Med. **8**: 345-352 (July) 1928.

five cases single infections were noted; in thirty-five cases two species were found; in seven there were triple infections, and in three, quadruple infections, *Endameba coli, Endolimax nana, Chilomastix mesnili* and *Giardia lamblia* being found on the same slide.

The low incidence of *Endameba histolytica* is in striking contrast to the observations of Tuttle at U. S. Veterans' Hospital No. 65, in Minneapolis. Yet it should be noted that while these seven cases represented 4.3 per cent of the 162 positive cases, they represent only 1.4 per cent of the approximately 500 referred cases from which the series was collected. The figure is comparable to the 1.07 per cent, or twelve cases, found in 1,100 inmates of a New York institution examined by Thomas and Baumgartner [6] in 1925. It bears out the conclusion of Boeck and Stiles [7] that, as a body, the United States troops that had gone overseas were not a source of greater danger in the spread of amebiasis than the home troops.

The finding of sixty-nine cases, or 42.6 per cent, of *Endameba coli* is not surprising, in the light of other reports. The corrected percentage for the entire group examined would be approximately 14. In any event, it illustrates the chances taken in the many laboratories which ask of the technician only a report as to whether or not "amebas" are present. On the other hand, the work of Kofoid and his students has made it necessary to consider whether some of these *coli* infections should in reality be classed as *Councilmania*. The question is one for further study.

The incidence of *Endolimax nana* was 34.5 per cent of the positive cases, but the corrected figure, 11.2 per cent, is close to the figure of 13.2 per cent given by Boeck and Stiles [7] as a result of 8,029 examinations. On the other hand, the ten cases, or 6.1 per cent, of *Iodameba*, with a corrected figure of 2 per cent, seem unduly low.

The finding of two cases of *Diendameba fragilis* is unusual but has been carefully checked. The ample opportunity for overlooking this delicate form or for confusing it with *Endolimax nana* supports Craig's statement that "it is probable that careful search will result in the finding of this parasite in most regions in a small percentage of individuals."

As to the flagellates, the low percentage of *Trichomonas* is in contrast to most of the figures in the literature, but there is no questioning the great preponderance of *Chilomastix*. In many of the published data the two are included under the one genus *Trichomonas*.

Giardia lamblia was present in twenty-five instances, or 15.4 per cent of the positive cases. Even when this figure is corrected for the group, a finding of 5 per cent is high when it is considered that all of the patients were adults. Lynch,[5] in his series of 1,040 cases from northern Texas, found only 2.3 per cent of *Giardia*, and 45 per cent of the patients were under 20 years of age. He regards the comparatively high incidence (6.5 per cent) in the figures of Boeck and Stiles as due to the inclusion of a number of children. Thomas and Baumgartner in their 1,122 cases found only twenty-seven patients, or 2.4 per cent, with *Giardia*, and of these only five, or 0.4 per cent, were in the age groups above 30.

In the present discussion there has been no attempt to consider the clinical aspects of the various infections. A necessary preliminary to any such consideration is the determination of the species of protozoa present. The data presented justify the conclusion that *Endameba histolytica* is not only no more prevalent but is distinctly less common in the North Central states than might be inferred from current statistics, based largely on studies in the Southern states and California.

It is by no means to be concluded that amebiasis is a negligible problem in the Northern states. On the contrary, there is abundant evidence that the condition may be contracted here as well as introduced by those who have traveled or lived in less rigorous climates.

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THE TEACHING OF MODERN SURGERY

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During the first week of April, 1927, the centenary of the birth of Joseph Lister was celebrated. Ten of his former dressers who were present at a meeting held in King's College Hospital during this celebration emphasized how much the adoption of principles advocated by him had widened the field of surgery. Many diseases formerly regarded as medical have acquired surgical interest because they require surgical therapy. Appendicitis, gallstones, duodenal and gastric ulcer, syndromes associated with perverted secretion of the thyroid gland and the hypophysis, and lesions of the brain and spinal cord are a few of the many diseases that have a decided surgical interest. Surgery no longer confines itself to the consideration of inflammatory processes, amputations, fractures and dislocations, tumors and emergencies.

While the field of surgery has become more and more extensive, the number of hours devoted to it in medical curriculums has been gradually reduced, with the result that the surgical department, as far as the number of hours is concerned, has been compelled to teach less and less of more and more. How to meet these conditions and to graduate a student somewhat proficient in surgery have become the problems of the surgical department.

A surgical clinic should be a college and a university combined. The college training must be more or less general. The student must be taught the principles of surgery; he should become acquainted with diagnostic procedures; he should see and interpret the pathologic changes that interfere with or destroy the function of tissues or organs, and should familiarize himself with the technic required in the treatment of surgical emergencies. The university division of the clinic must provide opportunities for advanced students who in college have shown a special aptitude for and a desire to specialize in surgery. These opportunities may best be provided by making those working in the university division members of the surgical teaching staff, on whom full responsibility for the care of patients and of teaching may be placed. Provision should also be made for a limited number who, having been engaged in active practice, wish to devote some time to new and advanced studies.

Instruction in clinical surgery must be scientific, searching and academic, but it should never be forgotten that clinical surgery is being taught. Sometimes

the student may not be able to differentiate between the scientific and the so-called practical methods. Recently a student was questioned as to how he would reduce a subcoracoid dislocation of the shoulder. The student asked whether the instructor wanted the shoulder reduced scientifically or quickly. There are certain immutable principles in surgery, and these must be taught.

Criticism of the teaching of surgery is not at all uncommon, but it should not be assumed—it cannot be proved—that the teaching of surgery is less effective than the teaching of medicine. In surgery the lack of personal technical skill and certainty in procedure are more glaring. There are certain defects in medical teaching in general, and it might be well to attempt to discover what these are and the causes.

BRIDGING THE GAP BETWEEN THE PRECLINICAL AND CLINICAL YEARS

During the past few years attempts have been made from time to time to advance clinical instruction to the second, even to the first year. This has been done to bring the student in contact with the patient early in the course, to maintain the interest of the student in medicine, and to indicate to the student early in his medical career the clinical importance of the fundamentals—pure science—taught in the preclinical years. Students at this period are usually unable to apply clinical methods and are not prepared to engage in clinical investigation. The study of the patient at this time may divert the student's attention from the fundamentals, whose importance he will appreciate—often too late—in the rounding out of his medical or surgical knowledge.

The criticism is not infrequently made that the preclinical teachers do not teach things which may be applied to clinical material. It is the function of the clinical teacher to apply, so far as he is able, the fundamentals to clinical material. Some propedeutic or preparatory clinics have been extremely valuable. Traube at one time gave a most successful propedeutic clinic in Vienna. This clinic was a success for two reasons: 1. It was attended by medical students and young physicians who could spend the time and money on it—apparently the course was elective—in order to learn something for use and not merely to pass an examination. 2. Traube was an exceptional clinical teacher, and his teaching ability and drawing power accomplished extraordinary results. A fortunate combination—eager, ambitious students and an inspiring clinical teacher—made this propedeutic clinic a great success. Such a combination is not, however, frequently encountered.

Propedeutic or preparatory demonstrations would, I believe, be preferable to clinics. The student would not be brought into intimate contact with patients, but patients could be used to demonstrate knowledge acquired in the preclinical years. Shock, hemorrhage and infections could be discussed. The clinical picture of suppurative thrombophlebitis could be demonstrated. The advisability of adopting Lexer's classification of infections, based on a newer bacteriology, might be discussed. The student has just finished his anatomy, and the relation of muscle action to the displacement of fragments in fractures may be shown. Such a demonstration would give an opportunity for a review of myology. The deformities of peripheral nerve lesions can be shown. Instead of calling the deformity of ulnar or combined ulnar and median palsy a griffin-hand or a monkey-hand, the student should understand the reason for the deformity. He should know that the lumbricales flex the first phalanx and extend the last two, and that when the ulnar or median nerve is paralyzed the antagonists act, extending the first and flexing the last two phalanges. Such a demonstration indicates a close relationship between anatomy and clinical problems. The student may have been taught that the coracohumeral ligament represents the old attachment of the pectoralis minor muscle; he now learns of its importance in reduction of dislocations of the shoulder. A review of the lymphatics may be made, for he now begins to think of lymphatics in their relation to metastatic growths. Bursae assume an increasing importance when miners' elbow, housemaids' knee and subacromial bursitis are mentioned. Little attention may have been paid to the popliteal bursa, but when popliteal hygroma is discussed the differential diagnosis of a number of lesions of the popliteal fossa may be considered. The possibility of infection of the knee joint by direct extension through the popliteal bursa indicates the importance of knowing which bursae communicate with joint cavities. The histology of the thyroid gland and the hypophysis have been recently studied, and the syndromes dependent on perversion of their functions may be shown. The effect of iodine on the hyperplastic thyroid will suggest the desirability of a review of the thyroid. A discussion of pain, its character and radiation, will emphasize the importance of a careful history and stimulate the student to review the sympathetic nervous system. The relation of the reticulo-endothelial system to purpuras would direct attention to an important system, which to many students has seemed devised to irritate rather than interest them. An hour could also profitably be applied to the repair of bone, tendons and peripheral nerves. These demonstrations would best be made in the winter quarter or semester of the second year.

By such demonstrations the students' attention would be directed to the application of knowledge gained in preclinical years to clinical problems. The instructor has an opportunity to give students the latest accepted teaching and to dismiss the false observations and statements that have accumulated in textbooks over a number of years. The instructor must act as a critic. By such a series of demonstrations the student is shown how the work of the preclinical years must be carried into the clinical years and applied to clinical problems. He is not thrown early, when he is totally unprepared, into clinical surgery, which has attractions for so many. His attention is not diverted from the fundamentals.

There should be a certain methodical progress in instruction and regular purposeful steps by which students pass from the beginning of their studies to independent activity in the clinic where they receive their final preparation. Methods of instruction are severely condemned from time to time, and the criticism is frequently made that too much attention is now given to scientific work and not enough to practical training.

When students should enter the hospital has been the subject of considerable discussion of late. The outpatient department is of especial importance to the surgical clinic, for here a large number of patients that cannot be hospitalized with present facilities are studied. In the conditions that are difficult of diagnosis, the patients are usually asked to enter the hospital, where they can be more leisurely and carefully studied. While the dispensary patient may present the earliest

symptoms, if the problem is difficult he will be asked to enter the hospital. It has always seemed to me that the third year student should be in the dispensary. Concentration of teaching during this period is absolutely essential. I would much rather have a student in the dispensary six days a week for eight weeks than have him two days a week for twenty-four weeks. When in the dispensary each day for some weeks he has an opportunity of seeing a patient on successive days, and patients may be referred to the outpatient department after having been discharged from the hospital, so that the results of treatment may be determined. Two hours in the morning may be devoted to history taking and the examination of patients. From 12 to 1, some typical or especially interesting cases should be demonstrated to the group by the instructor in charge. Teaching rooms should be provided. Small examining rooms add to the efficiency of the dispensary, for the student's attention should not be diverted while examining the patient. Medical literature should be cited. There is great advantage in citing frequently some especially recognized article dealing with the subject under consideration. Early in the course the student should begin to think of the patient as his own, for the care of whom he should assume responsibility.

CORRELATION OF THE CLINICAL, GROSS AND MICROSCOPIC PICTURES

There cannot be any argument about the value of bedside teaching and ward walks. Bedside teaching should not, however, be carried on as a matter of routine. The student should be taught the art of history taking and the methods of examination under the supervision of an instructor. The art of history taking should be cultivated; not enough attention is paid to it now. The importance of inspection, palpation, percussion and auscultation should be emphasized, and the diagnosis should be made by the ordinary clinical methods before the accessory or supplementary methods are employed. There has been some tendency the last few years to slight the ordinary clinical methods. There should be a return to these, for their importance in diagnosis cannot be overemphasized. The employment of these methods quickens the mind and stimulates thinking.

The clinical, gross and microscopic pictures should be correlated. One of the great defects of our present system of education is the wide separation of departments as to both space and time. A student may study the pathology of tumors in his second year, and he may not see such a tumor clinically until well on in his third or fourth year. If the student examines a tumor of the breast in the dispensary or in the ward, he should go to the operating room when the patient is operated on; he should be near enough to see what the tumor looks like in situ, and should then make a gross examination of the specimen and study the sections after they are made. *The operating room thus serves as a laboratory in which the clinical and pathologic pictures are correlated, rather than a laboratory where surgical technic is demonstrated.* It is much better pedagogically to have a student see the pathologic changes in acute appendicitis at the operating table than to have him see many diseased appendixes in the newest and most beautiful preservative, when it is difficult, almost impossible, to correlate the clinical and pathologic pictures. It is not necessary to multiply examples, for when this method is followed the student, when graduated, will not make a diagnosis of a lump in the breast, but will visualize the lesion and its relations. The criticism will immediately be made that such a method can be followed in but few instances. This criticism is perfectly just, but methods and habits of work will have been developed. Lowell has recently said that "cultivation of the mind by colleges is an attempt to make men think accurately, to discern between the essentials and the accidental in phenomena, and to train the imagination to grasp things that cannot be felt or perceived by the material senses." The time allotted to the surgical department makes it necessary to teach principles and give the different subjects taught their relative values.

DIDACTIC LECTURES

So far no mention has been made as to the value or need of didactic lectures. This discussion is not peculiar to this generation of surgical teachers. Billroth said:

> Systematic, scientific courses are being dropped by the medical faculty to such an extent that it would seem as if all scientific and medical teaching were being resolved into a series of practical demonstrational courses. The students are quite forgetting how to follow a lecture thoughtfully and with strict attention; they will gradually forget how to study with concentration and will want to cram everything thoughtlessly for practical uses in a purely technical manner. Let us guard against rushing from one extreme to the other in our teaching methods. It is much more convenient, of course, for the teacher merely to conduct clinics and to teach the simple routine of practice by his own example, but I should consider it a great misfortune if teaching were reduced to this alone.

At least two clinics a week are required to present the material properly, one for the third and fourth year classes, and one for the third. Unless such clinics are given, entire subjects, often of extreme importance, will be missed. The teachers in charge of the courses should see that the different fields of surgery are thoroughly covered. There are seasonal variations in disease, and an outline should be followed so that when diseases occur the entire class may have an opportunity of studying them. Whether clinics are held or lectures given depends on the material and the ability of the instructor. If an instructor gives clear, logical lectures, he should not be compelled to give a clinic. It is unwise to attempt to fabricate instructors. Individuality must be encouraged, different points of view given. An amputation may afford opportunity for a discussion of the history of amputations, of the principles governing them, and of artificial limbs. An obstruction of the esophagus may offer the occasion for consideration of all types of obstruction occurring in this tube. No hard and fast rule can be laid down concerning lectures and didactic courses.

PATHOLOGIC TRAINING

Pathologic training is of prime importance in the development of a surgeon. Every one practicing surgery should have at least a year's training in pathology before entering on the work. Surgical pathology is the kind that the surgeon requires in his everyday work. I have followed rather closely during the last few years the work in a laboratory of surgical pathology. The clinical history is given, and the gross and microscopic specimens are examined. It is surprising to see the amount of enthusiasm that can be aroused. The course in surgical pathology is one that students elect after having completed the required work—also a course in which students apply for voluntary work.

The volunteers are given every opportunity and not infrequently study a group of cases. Some valuable contributions have been made. Students develop methods which they will follow in their future work. A student acquires a sense for scientific work only in his student days, and the degree of scientific training and interest imparted to the young man at the medical school determines his intellectual level for the rest of his life.

TEACHING OF OPERATIVE SURGERY

In surgery the lack of technical skill, deftness and certainty as to methods of approach is glaring. The surgical department is confronted with one of its most difficult tasks in teaching technic. Almost every physician has had experience with large operative clinics. I have heard operations beautifully described when my view of the operative field was blocked by assistants or interfered with by distance. The description without the patient would have been as satisfactory—probably more instructive.

Preparation of supplies with which the student should be familiar may be taught in a number of ways. The properties of different suture material should be discussed. The technic of gastro-enterostomy and intestinal suture can be satisfactorily demonstrated and practiced on the stomach and intestine of the pig. Tendon, nerve and vascular sutures should be familiar to the student. Operative surgery on the cadaver is, I believe, of doubtful value, for the tissues differ in appearance from those in the living body. Most of the operations can be much more satisfactorily demonstrated to small groups who follow their patients to the operating room than in any other way. Emergency operations should be thoroughly known. It seems a waste of time to devote any great number of hours to the demonstration of operations when only a small percentage of the students will become surgeons, and these will have an opportunity to learn the technic of the operations in the university division of the clinic or as an assistant to an active surgeon.

THE VALUE OF MEDICAL HISTORY

It seems pedantic on the part of the instructor to give the name of the surgeon who described a new syndrome or the technic of some operation. Unless the student has some bent for history, the name will go in one ear and out of the other; but the mention of the name may stimulate the student to undertake some special historical reading which will broaden his view. If he can be induced to read of Ambroise Paré his imagination may be stimulated when he finds that Paré had an insatiable curiosity and that he would make almost any effort to find a new dressing for wounds. He can still read to advantage Pott's original description of arteriosclerotic gangrene or his description of the fracture known by his name. Raynaud's description of the disease named for him is a classic and can be read today with advantage. Langenbeck's preparation for surgery was a long one. Although not possessing any outstanding originality, he must have had a wonderful influence on assistants, for eventually most of the chairs of surgery in Germany and Austria and some in Holland were occupied by his surgical sons and grandsons. The student's mind should not, however, be burdened with names. If the outstanding names in surgery are repeated from time to time, enough interest may be aroused to influence the student to delve into history. The historical spirit should permeate the courses. Courses in the history of medicine and surgery have practically disappeared. The only opportunity to arouse some interest in history is found in the clinics devoted to the teaching of clinical surgery.

INTERN YEAR

In some ways, I believe that this council has made a great mistake, unintentional though it may be, in influencing state boards either directly or indirectly to specify the type of internship that a graduate should serve. I believe that a year's internship in one subject is preferable to a rotating service. If the graduate takes a year in medicine or pathology before entering on surgery, it will add to his efficiency. To learn one thing well is much better than to be superficial in half a dozen. It is difficult to maintain discipline when a student is in a service for a short while and the teaching cannot be very deep. It may be said in criticism that disciplinary methods suitable for boys cannot be applied to young men who have graduated from medical school.

The statement made years ago that it is impossible to make energetic, industrious, intelligent physicians out of slack, lazy, stupid students by means of school-like discipline at universities is undoubtedly true today; but the surgeon in charge should have the power to exercise discipline when such is required.

Any student should have an opportunity to appear before a licensing body irrespective of whether he has studied in an institution with fewer hours devoted to a certain subject than the state deems necessary or whether he has served an internship that corresponds to the one it requires. If such restrictions and limitations are necessary, there must be some doubt in the minds of the examiners as to whether the examinations given by them will enable them to separate the good from the bad. Any graduate should be allowed to appear. The examiners should decide as to the capabilities of the student.

THE ELECTIVE SYSTEM

The medical curriculum has become crowded with new subjects and liberalization is desirable, for the student must have time to digest the material given him—a little time for contemplation and study. I was doubtful about the elective system, but I believe that it works well. Students are able to select the instructor and to take work at other institutions. Such a method widens the student's point of view. Some control should be exercised, however, so that the poor student will not be the one that is too anxious to escape from parental control. The student must also be well advised, so that he does not specialize too early, for each must still be regarded as a part of the whole. Required courses must not conflict with elective courses. I have known institutions which congratulated themselves on giving a large number of electives, but the required conflicted so often with the elective courses that it was impossible for the student to take an elective. The subject of electives was discussed very intelligently at Princeton several years ago. Emphasis was laid on "guided education" as contrasted with "free electives." Subjects of the freshman year were entirely prescribed, and of the sophomore year largely so. The junior was to make a choice, not from a miscellany of studies, but from a scheme of related subjects. It was said by the authorities that they "must supply the synthesis and must see to it that whatever group of studies the student selects, it shall at least represent the rounded whole and contain all the elements of modern knowledge." When the

elective system is instituted, it must be definitely established that the student use his time to advantage. He should not neglect subjects because they may be difficult for him. Surgical education should be more than entertainment.

RESIDENT SYSTEM

The resident system is the foundation of the university division of the surgical clinic. Men chosen for the resident positions should be carefully selected and should have special qualifications. Full responsibility for the care of patients should be placed on residents as soon as they develop. They should be carefully guarded against routine and should have a part of each day free for experimental or other laboratory work. It may require from four to five years for an assistant resident to become resident, but during this period in the assistant residency an opportunity has been had to judge of the man's ability. Care should be exercised that the resident does not stay too long, for he may become hospitalized. The resident system should give opportunity for the development of a number of men. Residents should take an active part in the operation of the department and should be used in the dispensary and in teaching.

POSTGRADUATES

Provision should also be made for graduates in medicine who wish to carry on advanced studies in surgery. No courses for these should be shorter than four months. It would be better if physicians taking such a course could remain six months. Provision can readily be made for such men in the outpatient department, in the wards and in the laboratories. It is impossible, however, with the existing facilities to give these advanced students operating experience. They cannot displace the men who have already developed in the system. They can secure all the work except the operative work, and even with a much larger service than a university clinic could develop to advantage, it would be impossible to provide this work. These graduate students would not wish to spend the amount of time necessary to work into the system.

TRAINING OF TEACHERS

Teachers must be provided. Teachers of clinical surgery are trained gradually and at the bedside by eminent practicing clinicians. This does not mean that the teacher of surgery should not have a training in physiology, pathology and chemistry—either one or all. He should major in clinical surgery under an eminent clinician. There are certain imponderables in the make-up of a surgeon, and I have frequently viewed with interest the choosing of a surgeon, when they themselves required surgery, by those who speak and write most fluently of the ideal surgeon. Not infrequently they choose a surgeon who is the exact opposite of the one they have described as the ideal.

NUMBER OF BEDS

To teach seventy-five students, the service should have at least 200 beds. This number of beds will supply the staff with cases for study and meet the teaching demands. There should be no occasion for examining each patient frequently every day. If not enough material is provided, the patient probably will be examined frequently. While such an arrangement shows consideration for the student, it is terrible for the patient.

A student learns surgery by seeing material. "Repetition is the parent of learning." Surgery demands a careful objective examination of the patient for the establishment of an anatomic diagnosis, which, together with the symptomatic diagnosis and etiology, creates a concept of a progressive and variously modified disease process. Only by a combination of all the data does one arrive at a method of treatment that is designed to attack not merely the symptoms but, wherever possible, the cause of the process—the disease itself—as well as the disease products.

It has been well said that no one who works in a surgical service or writes on the subject ever grows tired of seeing new patients the whole day long. Nowhere else can he learn so much as in this book of personal experience, and the bulkier it grows the better. A student learns clinical surgery by observing carefully and critically a large material and verifying his diagnosis by autopsy or operation. Naturally a large material can be studied in a routine and slovenly way without adding one iota to clinical knowledge. The best clinicians that I know have studied exhaustively a large material. Illustrative of this fact is the following story: One day a group of physicians were examining and discussing a patient in one of the wards of the Johns Hopkins Hospital. Members of this group had gone over the patient carefully without arriving at a diagnosis, when Osler appeared. Some one of the group asked him what the disease might be. He replied that it was a case of mycosis fungoides. Some one asked him, "How do you know that?" He replied, "I have seen such a case before." Great clinicians accumulate a store of knowledge. Not infrequently they seem to have intuitive diagnostic power. I am acquainted with a great clinician who seems at times a little careless and offhand in his diagnostic methods, but still he registers a high percentage of correct diagnoses. He has knowledge correctly indexed and ready for use.

At least one hundred beds should be free. By a free bed I mean one endowed by the university which is reserved for free patients. Under such an arrangement a continuous teaching policy may be outlined and continued. It will not be necessary each year to determine whether or not these beds may be reserved for free cases, depending on the size of the deficit. *Admission to such beds should be under the charge of the surgical department.* Surgeons who are working in the department know what material is needed for teaching and the problems that members of the department have under consideration.

SUMMARY

Surgeons cannot be fabricated. They must be allowed and encouraged to develop individuality. The clinic will primarily develop clinical surgeons. From these some will develop with a distinct and outstanding ability to investigate and contribute to knowledge. They will probably not be recognized until they arrive, for superiors and contemporaries are somewhat slow as a rule in recognizing genius. Research done under a superior, who suggests the problem and aids in the work and in the writing of the paper, is not very valuable. Such work does not develop the student. The surgical department should be able to provide the material, clinical and experimental, for the man who has the desire and ability to become a surgeon.

Ever since I graduated there have been frequent changes in the methods of medical education. In the dictionary of medical education, change is not necessarily a synonym of progress.

RATE OF ABSORPTION OF HORSE SERUM AFTER INJECTION

ITS RELATIONSHIP TO SERUM DESENSITIZATION AND TO SERUM THERAPY *

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I [1] recently reported a case in which intramuscular injection of approximately 8 cc. of antistreptococcic serum given in fractional doses over a period of three hours failed to protect the patient against the intravenous injection of less than 10 cc. of the same serum, death resulting from an accelerated serum reaction. In reviewing the literature, two other instances of failure of attempted desensitization were noted. In one case, reported by Koch [2] in 1915, 5 cc. of serum given subcutaneously five hours before the final injection failed to protect the patient against a fatal outcome. In the second case, reported by Blankenhorn [3] in 1925, seven doses of serum beginning with 4 minims (0.25 cc.) and ending with 5 cc. were given at two hour intervals, and yet in spite of this 5 cc. of serum given intravenously produced a severe and almost fatal reaction. These experiences seemed to indicate that such methods of desensitization used prior to reinjections of serum were of little or no value in the prevention of serum reactions in the human being. As has been previously pointed out, such methods have been copied from similar methods in lower animals without proof that the mechanism is of the same character as in the lower animal or of its effectiveness as judged from clinical experience. In all the methods it has been assumed that by giving increasing doses at short intervals, rapid absorption of the serum occurs and produces in the patient's blood a state of desensitization sufficient to make intravenous injection safe. Although previous investigators have reported the presence of horse serum in the circulation after the injection of immune serums (Longcope and Rackemann,[4] Arndt [5]), no report could be found in which the rate of absorption had been determined. In reviewing my own reported case the thought occurred to me that possibly insufficient time was allowed between the initial injection and the final one for enough absorption to occur to render desensitization effective. In order to determine more definitely the time required for complete absorption of horse serum after injection, the present study was undertaken, and it is my purpose in this communication to report the results obtained.

The plan of procedure employed throughout consisted in a general way of the injection of the horse serum intramuscularly and subcutaneously and the determination of its presence in the patient's serum by means of the precipitation test, the serum of the patient providing the antigen (horse serum) and a rabbit immune serum containing anti-horse precipitins providing the antibodies. Preliminary experiments carried out on guinea-pigs showed that, after subcutaneous injection, complete absorption of the horse serum occurred in from six to twelve hours. Studies were then carried out on three patients from the service of Dr. J. F. Schamberg of the Graduate Hospital of the University of Pennsylvania—who had received normal horse serum as a form of nonspecific protein therapy for certain skin lesions. Preliminary skin tests on these patients with horse serum diluted 1:10 were negative in all cases. Two of the patients, W. J., aged 18, and G. C., aged 27, received 50 cc. of sterile normal horse serum deep into the muscles of the anterior thigh, while the third patient received 50 cc. subcutaneously into the anterior abdominal wall. Blood samples were taken before the injection and at frequent intervals after the injection, as can be seen in the accompanying tables. Care was taken to obtain the serum if possible prior to meals to preclude cloudiness, but in some instances this could not be avoided and such serums were discarded.

Each serum was tested separately against immune rabbit serum of known titer, the small conical-tipped glass tubes described by Coca [6] being used for the test in order to conserve the serum. One drop of the immune rabbit serum was overlaid with one drop of the human serum to be tested and after ten minutes, if the serum was positive, a white precipitation ring could be seen at the point of contact. Controls of normal human serums and saline and diluted horse serum against the immune serum were used with each series of testing. For convenience in classification, reactions were read as one, two, three or four plus depending on the comparison of the density of the ring produced with a control of immune serum and the known titer dilution of normal horse serum. A slight ring was read as one plus; slight to moderate two plus; moderate to marked three plus, and marked or marked plus, four plus. The same immune rabbit serum was used throughout, and in order to prevent the possibility of a pseudoreaction produced apparently by the presence of a natural precipitin for human serum present in the rabbit serum, each cubic centimeter of the immune serum was treated with 3 drops of normal human serum and the precipitate removed after twenty-four hours by centrifugation. By keeping the rabbit immune concentration constant and diluting the patient's serum with physiologic solution of sodium chloride until the diluted serum did not give any further precipitation, it was possible to determine the comparative amounts of horse serum present and thus provide a quantitative index.

In two of the patients blood samples were obtained as long as a month after the injection and studied in similar fashion in order to determine how long the horse serum remained in the circulation and its rate of disappearance. In one patient (C. M.) daily twenty-four hour urine samples were obtained both before and after the injection and each urine sample was tested for horse serum both in its ordinary state and also in some specimens after removal of crystalline material by dialysis.

RESULTS

The results are best illustrated by the accompanying tables and, as can be seen from these, the rate of absorption was practically identical in all three cases, indicating apparently that the mode of injection made little difference. In each of them the absorption of the

* Read before the Philadelphia Pathological Society, Feb. 14, 1929.
* From the Laboratories of the Graduate Hospital, University of Pennsylvania and the Research Institute of Cutaneous Medicine.

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horse serum was slow: at the end of an hour very little could be detected in the circulation; from this point on there seemed to be a gradual but regular increase, until at the end of fifteen hours the major portion of it seemed to have been absorbed with but little additional absorption after this, until at the end of twenty-four hours practically complete absorption had occurred.

TABLE 1.—*Rate of Absorption of Fifty Cubic Centimeters of Normal Horse Serum Injected Intramuscularly in W. J., Aged 18*

	Whole Serum	Dilution 1:2	1:4	1:8	1:16	1:24	1:32	1:48	1:64
1 hour	+	±	Neg.	Neg.	..	..	..	..	..
2 hours	++	+	Neg.	Neg.	..	..	..	..	..
4 hours	+++	++	+	Neg.	Neg.	..	..	..	..
6 hours	++++	+++	++	+	Neg.	Neg.	..	..	..
8 hours	++++	+++	++	+	Neg.	Neg.	..	..	..
10 hours	++++	++++	++++	+++	+	Neg.	Neg.	..	..
12 hours	++++	++++	++++	+++	+	Neg.	Neg.	..	..
24 hours	++++	++++	++++	++++	+++	++	+	Neg.	Neg.
36 hours	++++	++++	++++	++++	+++	++	+	Neg.	Neg.
48 hours	++++	++++	++++	++++	+++	++	+	Neg.	Neg.
3 days	++++	++++	++++	++++	+++	++	+	Neg.	Neg.
5 days	++++	++++	++++	+++	++	+	Neg.	Neg.	Neg.
8 days	++++	++++	+++	++	+	Neg.	Neg.	..	..

The horse serum then apparently remained in the circulation in fairly constant amount for a period of three or four days, when it began to disappear gradually, so that on the tenth day very little could be detected and at the end of about seventeen days hardly any could be found present. In none of these cases were any ill effects observed as a result of the injection.

Study of the urine for horse serum by the precipitation and complement-fixation methods failed to reveal its presence in either the ordinary or the dialyzed specimens. Apparently horse serum is not filtered out as such by the kidney.

COMMENT

The slow absorption rate of horse serum as revealed by these experiments is somewhat surprising and rather contrary to the general idea of rapid absorption, an idea based no doubt on clinical evidence of an apparent rapid absorption of such other substances as dextrose

TABLE 2.—*Absorption of Normal Horse Serum Injected Intramuscularly in J. C., Aged 27*

	Whole Serum	Dilution 1:2	1:4	1:8	1:16	1:24	1:32	1:48	1:64
1 hour	++	++	+	Neg.	Neg.	..	..	..	..
6 hours	+++	+++	++	+	Neg.	Neg.	..	..	..
9 hours	+++	+++	++	++	+	Neg.	Neg.	..	..
12 hours	++++	+++	+++	++	++	+	Neg.	Neg.	..
15 hours	++++	++++	++++	+++	++	+	+	Neg.	Neg.
20 hours	++++	++++	++++	+++	++	++	+	Neg.	Neg.
24 hours	++++	++++	++++	+++	++	++	+	Neg.	Neg.
48 hours	++++	++++	++++	+++	+++	++	+	Neg.	Neg.
3 days	++++	++++	++++	+++	+++	++	+	Neg.	Neg.
4 days	++++	++++	++++	+++	+++	++	+	Neg.	Neg.
5 days	++++	++++	+++	+++	++	++	+	Neg.	Neg.
6 days	++++	++++	+++	++	++	+	Neg.	Neg.	..
8 days	+++	+++	++	++	+	Neg.	Neg.	..	..
10 days	++	++	++	+	Neg.	Neg.	..	..	..
13 days	++	++	+	Neg.	Neg.	..	..	..	..
17 days	++	+	Neg.	Neg.	..	..	..	..	..
28 days	Neg.	..	..	..	..	..	..	..	..

and various dyes and drugs after their intramuscular or subcutaneous injection. The slow rate may possibly be explainable on the basis of horse serum being a relatively inert colloid, probably more or less insoluble in human tissues and therefore requiring more time for its absorption, just as is the case with such inert substances as bismuth. This would also account for the fact that it persists in the circulation for some time and possibly for its inability to pass through the renal glomeruli.

The slow absorption rate also indicates a possible cause of the failure of attempted desensitization in the reported cases, since in all three, slow absorption of horse serum would have precluded the entrance of sufficient of the antigen into the circulation to have been effective against the amount injected intravenously. Hence, a logical deduction based on these experiments is that whenever desensitization is attempted, if it is to be at all effective the method used should be so modified as to allow at least a fifteen to twenty-four hour period for complete absorption of sufficient of the antigen to bring about desensitization.

Though few cases have been reported of fatality occurring in spite of attempted preliminary desensitization, it is not unlikely that many more occur than are reported. In the light of our present knowledge and the results of these experiments, it seems worth while to summarize in a general way the conditions in which desensitization should be attempted, those in which it should not be attempted and, finally, the methods of procedure to be used.

TABLE 3.—*Rate of Absorption of Fifty Cubic Centimeters of Normal Horse Serum Injected Subcutaneously in C. M., Aged 28*

	Whole Serum	Dilution 1:2	1:4	1:8	1:16	1:24	1:32	1:48	1:64
2 hours	+	+	Neg.	Neg.	..	..	..	..	..
6 hours	+++	++	+	Neg.	Neg.	Neg.	..	..	..
12 hours	+++	+++	++	+	Neg.	Neg.	..	..	..
24 hours	++++	++++	+++	++	+	Neg.	Neg.	..	..
36 hours	++++	++++	+++	++	+	Neg.	Neg.	..	..
48 hours	++++	++++	+++	++	+	Neg.	Neg.	..	..
72 hours	++++	++++	+++	++	+	Neg.	Neg.	..	..
4 days	++++	++++	+++	+	Neg.	Neg.	..	..	..
6 days	++++	++++	+++	+	Neg.	Neg.	..	..	..
8 days	+++	+++	++	Neg.	Neg.	..	..	..	..
10 days	+++	++	+	Neg.	Neg.	..	..	..	..
12 days	++	+	Neg.	Neg.	..	..	..	..	..
14 days	+	Neg.	Neg.	..	..	..	..	..	..
28 days	Neg.	Neg.	..	..	..	..	..	..	..

In the first place it is well to remember that before any injection of serum is given, and particularly if it is to be given intravenously, an intradermal skin test with 0.02 cc. of either whole serum or preferably horse serum diluted 1:10 should be carried out. If the skin test is negative, administration of serum can then be given with safety. If, however, the skin test is positive, one should then attempt to determine whether the sensitivity to horse serum is a natural one or has been acquired. The presence of a natural hypersensitiveness to horse serum would be suggested by the following points: (1) absence of a history of a previous injection having been given or a history of a violent immediate reaction to a previous injection; (2) a family history of some form of allergy, and (3) a very marked and persistent reaction to the skin test, even with the scratch method. Further, the serum of the group of naturally sensitive patients will in many instances show on passive transfer the presence of an antibody or reagin to horse serum. Any one or all of these points are in favor of a natural hypersensitiveness to horse serum and in such patients injection of horse serum in any form, even in the smallest amount, is very apt to bring about a severe or fatal reaction. Hence, attempts at desensitization will not only be ineffective but may be dangerous and should not be carried out. It is preferable in this group to use the serum obtained from some animal

other than the horse, and one to which the patient is not sensitive.

The second group, patients with acquired or induced hypersensitiveness to horse serum, have, as the term implies, acquired sensitivity to horse serum, usually as a result of a previous serum injection. Determination of this type of hypersensitiveness will depend on the following points: 1. There is usually a history of a previous injection having been given without any untoward effects, except possibly for the usual serum sickness occurring from three to fourteen days after the injection. 2. The family history in this group is often negative. 3. The skin test, though positive, is less marked than in the naturally sensitive group and is apt to be negative by the scratch method. 4. Antibodies are usually absent from the blood.

It is in the second group, those with an acquired or induced hypersensitiveness, that desensitization may be of value. Although Park,[7] in a series showing positive skin test from a previous injection, was able to reinject without resultant untoward reaction, nevertheless an accelerated serum reaction is more apt to occur in this type of case; and in occasional patients, as in the one I reported, the reinjection of serum after the usual period of incubation for serum sickness, and particularly in patients who have had serum sickness, is fraught with some danger of a severe or even fatal serum reaction, particularly if the injection is given intravenously. Hence, one should weigh carefully the possible danger of the injection on the one hand and the therapeutic necessity for its administration on the other. If the administration of the serum is paramount, subcutaneous or intramuscular injection is preferable because it is less dangerous. Such an injection may be preceded by an attempt at desensitization, and, in the light of these experiments, the following plan is suggested: An injection of 0.1 cc. of the serum is first given intramuscularly, followed in a half hour by 0.3 cc.; in an hour by 0.5 cc., and in two hours by 1 cc. After a subsequent lapse of two hours, if no untoward symptoms occur as a result of these injections, one may assume that the patient does not belong to the class of persons with natural or atopic hypersensitiveness; otherwise a reaction would have occurred in this period. One can then more safely proceed with further injections of the serum, giving increasing doses by injection every three hours until all has been given. The dose of the serum to be given after the first four hours will depend on the total amount that the the patient has to receive, but the general principle should be to increase the amount gradually so as to give the remainder of the serum within the ensuing twenty-four hour period, injections being given every three hours. If it is absolutely essential to give the serum intravenously in spite of any existent danger, preliminary desensitization should be carried out intramuscularly as suggested, the injections being extended over a period of twenty-four hours. At the end of this time intravenous injections should be given, with an initial dose of 0.5 cc., as recommended by the Rockefeller Hospital,[8] increased very gradually every half hour or preferably every hour until the total amount of serum has been administered. The intravenous injections should be given with the greatest caution, the serum being administered very slowly and the injection discontinued at the first sign of any untoward reaction.

It is rather difficult to formulate a definite plan of desensitization which will be effective in all instances, as is the case with the lower animals, such as the guinea-pig, since we are not at all sure that the mechanism of production of sensitiveness in the human being is the same as in the lower animal. Hence, any plan of desensitization is more or less experimental and may or may not be effective. It is therefore unwise to place complete reliance on any set method of desensitization to protect the patient fully against a severe or even fatal outcome. It is much better to treat each case individually and modify the plan of procedure outlined here according to the patients' reaction. The proportion of severe or fatal serum accidents which occur in the course of serum therapy is certainly too small to deter one from the use of serum whenever indicated; however, by carrying out some of the procedures outlined here, even this small percentage may be avoided, accelerated serum reactions minimized and the cases adaptable to serum desensitization better selected, the limitations of this method, of course, being realized.

Finally, the results of these experiments are of importance in relation to serum therapy. It is not unlikely that immune antibodies administered subcutaneously or intramuscularly are absorbed as slowly as is horse serum. This was shown to be true of antitoxin by the experiments of Park [9] some years ago and more recently of pneumococcus antibodies by Dorothy Rhoades,[10] and it is no doubt similarly applicable to other immune antibodies. These facts strengthen the contention that in order to secure rapid and maximum clinical effect from serum therapy intravenous administration should be the method of choice, when contraindications do not exist.

SUMMARY

1. The rate of absorption of horse serum after either subcutaneous or intramuscular injection was found to be rather slow, requiring at least from fifteen to twenty-four hours for absorption of the major portion; after its entrance into the circulation the amount of horse serum remains stationary for three or four days and then gradually decreases, until at the end of seventeen days only a trace is present.

2. At no time could any horse serum be detected in the urine; apparently it is not filtered out as such by the kidney.

3. The slow absorption rate suggests one possible cause of failure of the usual methods of desensitization to protect against fatalities in the cases reported. A modification of these methods is suggested, by which gradually increasing doses are given over a period of twenty-four hours, so that enough of the antigen may be absorbed to render desensitization more effective.

4. Prior to any form of serum therapy and irrespective of the method used, a skin test with horse serum is essential. If negative, serum may be given with safety. If positive, one should determine whether the hypersensitiveness to horse serum is natural or has been acquired as a result of a previous injection.

5. Methods of serum desensitization in the human being should be limited only to cases in which there is an acquired form of hypersensitiveness. In the natural form of hypersensitiveness it not only is ineffective but

7. Park, W. H.: J. Immunol. 9: 17 (Jan.) 1924.
8. Avery and others: Monograph 7, Rockefeller Institute for Medical Research, 1917.
9. Park, W. H.: J. Infect. Dis. 14: 338, 1914.
10. Rhoades, Dorothy: Bull. 141, Hyg. Lab. U. S. P. H. S., 1925, p. 31.

may be dangerous. Too much reliance should not be placed on any method of desensitization, the efficacy being at best doubtful.

6. A slow absorption rate for horse serum suggests a similar occurrence with immune antibodies; hence intravenous administration is always preferable for rapid clinical effect, unless contraindications exist.

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EIGHT CASES OF TUBERCULOMA OF THE BRAIN FOUND AT NECROPSY *

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Discussions concerning tuberculosis of the localized type known as tuberculoma or solitary tubercle, as distinguished from the more diffuse meningeal involvement, have appeared frequently in recent literature. As there is some variation in the data presented with reference to the single occurrence of these lesions, and their sites of location, it is thought worth while to present several cases of intracranial tuberculoma which have been observed in the necropsy service of the New Haven Hospital, and to contrast these cases with those already reported. In 1,699 consecutive postmortem examinations, 809 of which included the cranial contents, tuberculous meningitis was present thirty-four times. Of these, there were eight in which gross involvement of the brain substance was seen. The cerebrum alone was involved once, the cerebrum and the cerebellum four times, the cerebrum and pons once, the cerebrum, cerebellum and pons once, and the pons alone once. Four of the patients were infants, aged 6 months, 12 months, 13 months and 16 months, while the other four were adults, 17, 25, 34 and 36 years of age. Three were males, and five females.

In the case reports with the anatomic observations given here, only the points in the history and physical examinations which seem particularly relevant are summarized. Attention is directed to the use of the term tuberculomas as indicating only those lesions which can readily be seen grossly in the brain substance. It is possible microscopically in many instances of tuberculous meningitis to observe foci of necrosis, proliferation and small mononuclear cell infiltration extending from the meninges into the brain. These probably represent lesions which not infrequently develop into the gross masses.

REPORT OF CASES

CASE 1.—*Clinical History.*—L. K., a boy, aged 16 months, was admitted to the New Haven Hospital, March 31, 1920, because of convulsions. The patient's mother was very sick with pulmonary tuberculosis. The child had always been well except for bronchopneumonia at the the age of 3 months, and an increasing irritability shortly before admission. For three or four days prior to admission he had had a fever. On the afternoon of admission, he had had a sudden convulsion with retraction of the head, strabismus and general muscular twitchings. Convulsions were repeated almost every hour. Examination revealed a well nourished child in a deep coma with constant convulsive twitchings of the left side of the face, the left arm and the left leg. The pupils were dilated, and nonreactive to light. A conjugate deviation of the eyes to the right was present. Lumbar puncture showed a turbid spinal fluid under greatly increased pressure. Of 1,000 cells per cubic millimeter, 70 per cent were mononuclear. The sediment showed tubercle bacilli. The white blood count was 20,000, 81 per cent being polymorphonuclear neutrophilic leukocytes. The temperature varied from 101 to 104 F., the pulse from 160 to 180, and the respirations from 60 to 80 a minute. The child died two days after admission.

Pathologic Report.—At autopsy, the brain was removed with difficulty because of the adherence of the dura to both the skull and the pia, to which it was tied by many thrombosed, cordlike vessels. The dilated vessels of the pia projected, and on cross section thrombi were seen plugging the lumens, and containing yellow-white opaque nodules, especially along the medial cerebral artery. At the apex of the left temporal lobe, particularly, there were numerous gray, miliary nodules. The base of the left occipital lobe, however, was the site of very numerous, somewhat larger and more opaque nodules. On section there was found an area of softening in the left occipital lobe which extended practically to the base of the lobe. In the center of this softened area were several yellow, caseous nodules, the largest being about 5 mm. in diameter.

Microscopically, there was seen in this area an extensive necrosis of brain substance which was irregular in outline and not very well circumscribed. Scattered about its edges were small mononuclear cells, along with some proliferation of fibroblasts and new capillaries. This proliferative process very rarely took the form of a typical tubercle. Giant cells were infrequent, and were seen mostly in the brain tissue just below the meninges. The latter showed a mixed proliferative and exudative reaction, particularly around the blood vessels, there being seen in some places large mononuclear cells and precipitated materials from the serum and, in others, epithelioid cells, arranged rather loosely in whorls, with some central caseation and a surrounding layer of small mononuclear cells.

The complete anatomic diagnosis was:

Primary: Tuberculous cervical and bronchial caseous lymphadenitis; tuberculous bronchopneumonia; disseminated tubercles in the viscera; tuberculomas of the brain and tuberculous meningitis.

Subsidiary: None.

CASE 2.—*Clinical History.*—J. F., a colored man, aged 36, was admitted to the New Haven Hospital, Nov. 30, 1920, because of "fever and chilly sensations." His family history was unimportant. His past history included "malaria" at 14 and gonorrhea in 1910 and in 1920. During about twenty months prior to his admission he suffered from several discharging sinus tracts connecting with bones. Pathologic examination of curettings from these in August, 1920, showed granulomatous tissue. The Wassermann tests were repeatedly negative. At the final admission his temperature was 100 F., the respirations 25 and the pulse 90 a minute. There was a round, ulcerated area, 1½ inches (38 mm.) in diameter, over the manubrium, discharging a purulent material. A similar, smaller area was present over the upper end of the right tibia. No acid-fast bacilli were found in the pus. On the seventh day in the hospital, the temperature rose to 105, following which it ran a septic course. On the seventeenth day, the patient became drowsy, expectorated a mucopurulent material, and developed coarse râles and dulness in the right side of the chest. He died the following day.

Pathologic Report.—At autopsy the brain was found adherent to the dura just beneath the large wing of the sphenoid on the left, and also about the cerebellum on the right side. The cerebellum in the region of the adhesions was covered by a green, opaque yellow exudate, which in some portions showed discrete rounded areas resembling tubercles. There was an area of apparent necrosis involving the substance of the cerebellum, about 1 cm. in diameter. This was rather irregular in outline, though fairly well demarcated. In the area where the brain was adherent in the middle fossa there were also a few small yellow opaque nodules scattered through the substance of the brain adherent to the dura.

Microscopically, the meninges showed a small mononuclear reaction with necrosis. The cerebellum showed a similar reaction in the meninges. In the area of gross necrosis it was seen that the lobulations of the cerebellum were glued together by the exudate and necrosis in many places, with a good deal of necrosis of the cerebellar substance, which contained much

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nuclear débris. There was considerable round cell infiltration about the vessels, with frequently a fibroblastic proliferation, which was seen to some extent unassociated with the vessels.

The complete anatomic diagnosis was:

Primary: Chronic pulmonary tuberculosis; tuberculous pleurisy; tuberculous osteomyelitis with sinus formation (sternum and tibia); tuberculosis of the tonsil; tuberculous meningitis; tuberculomas of the brain; emaciation; bronchopneumonia; cloudy swelling of the viscera.

Subsidiary: None.

CASE 3.—*Clinical History.*—L. B., a colored girl, aged 17 years, was admitted to the New Haven Hospital, Nov. 7, 1923, because of abdominal pain, loss of weight and weakness. Her family history was negative. She had had several of the childhood diseases. Beginning in November, 1922, she suffered daily attacks of dull abdominal pain with later development of a thick yellow, foul, vaginal discharge, cessation of the menses, dysuria, nocturia, afternoon fever, night sweats, weakness and progressive loss of weight. About six weeks before admission she developed a productive cough. Physical examination revealed great emaciation. The chest showed cavitations at both apexes. There was tenderness in both lower quadrants of the abdomen with spasm of the abdominal muscles. The cervix uteri was irregular and tender, with a profuse foul discharge. The temperature on admission was 102 F., and it subsequently varied between subnormal and 103, the pulse rate being between 100 and 102 a minute. Two weeks after admission the patient became irrational, her neck became stiff, and she kept her thighs flexed. No definite Kernig or Babinski signs were elicited, however. November 25, the left eye showed a purulent discharge, and the next day she developed a partial left ophthalmoplegia. She became comatose. The red blood cell count was 3,200,000, hemoglobin, 65 per cent, and the white blood cell count, from 11,200 to 18,000, with from 79 to 88 per cent polymorphonuclear leukocytes. The Wassermann reaction, sputum and blood culture were negative. The spinal fluid was under increased pressure, contained 134 cells with 56 per cent polymorphonuclears and 44 per cent lymphocytes, and gave a three plus globulin reaction. The patient died, Nov. 30, 1927.

Pathologic Report.—At autopsy, the meninges at the base and at the cerebellopontile angle were covered by a white, filmy exudate. Over the brain and in its substance were numerous firm, yellowish, granular areas, which measured from 5 mm. to 2 cm. in diameter. They were present in almost all the lobes, in the internal capsule and in the thalamus. A small one was seen in the cerebellum. The coverings of the medulla and upper cord were thick and black. The ventricles of the brain were markedly dilated. Microscopically, the meninges were seen to be greatly thickened in places by a dense infiltration of lymphocytes with some mononuclear phagocytes and a few polymorphonuclears. Around some of the meningeal vessels, particularly, there was seen a whorl formation of epitheliod cells and mononuclear cells, without, however, much fibrous tissue. There was a good deal of necrosis in these. In some places, this process extended into the brain substance. There were likewise in the brain more isolated large areas of necrosis surrounded by lymphocytes, granulation tissue and distended blood vessels, many with a thick perivascular layer of small mononuclear cells, resembling lymphocytes. Scattered in these areas were fairly large pink staining cells, with a small round nucleus or sometimes two or more nuclei. Giant cells of the Langhans-Schüpfel type were seen occasionally. The meninges of the cord were quite similar to those of the brain, except for the presence of large, black, pigmented macrophages.

The complete anatomic diagnosis was:

Primary: Tuberculous mesenteric, retroperitoneal, pelvic and bronchial lymphadenitis; chronic ulcerative pulmonary tuberculosis; fibrous pleurisy; tuberculous epiglottitis and enterocolitis with multiple perforations of the sigmoid and rectum; localized tuberculous abscess of pelvis; tuberculosis of uterus and fallopian tubes; tuberculosis of ureter; hydronephrosis; tuberculous peritonitis; disseminated tubercles in liver and spleen; tuberculous meningitis; tuberculomas of brain.

Subsidiary: Adenoma of the thyroid.

CASE 4.—*Clinical History.*—V. M., a girl, aged 6 months, was sent to the New Haven Hospital, Dec. 29, 1924, for regulation of feeding, because of malnutrition. The family history was unimportant. The child was a full term baby, and had been breast fed for four weeks and then placed on a formula. The stools were green and later the bowels became quite constipated, so that enemas and castor oil were given. On the child's admission to the hospital, no general glandular enlargement was noticed, though she was quite undernourished. An acute pharyngitis and bilateral otitis media were found. The heart and lungs were normal. A few days later both ears began to discharge a seropurulent material and enlarged glands were noticed in the neck. The child had an intermittent temperature of from 36.5 to 39 C. (97.7 to 102.2 F.) but took her feedings well, though she lost weight until February, when she began to gain. Roentgen examination at this time revealed a hazy mottling throughout both lungs. The swelling of the neck continually increased, involving the submaxillary region on both sides and the left supraclavicular fossa. The mass on the left side was incised and pus obtained which contained hemolytic streptococci. Examination of the lungs revealed impaired resonance in the right interscapular region. Early in April a blood streaked sputum was observed which showed numerous tubercle bacilli. The white blood cell count rose from about 12,000 to 21,000 with 90 per cent polymorphonuclear leukocytes, the child's condition grew suddenly worse, and death occurred on April 10, 1925.

Pathologic Report.—At autopsy, the brain did not show anything of note externally. No tubercle formation could be found on careful examination of the meninges, particularly in the region of the sylvian fissure. Sections of the brain, however, through various levels showed numerous round masses from 0.3 to 1 cm. in diameter, several bulging into the third ventricle. The centers were composed of a grumose gray material, surrounded by a distinct fibrous tissue capsule which contained dilated blood vessels. The internal capsule and the lenticular nucleus on the left contained small tubercles. In the white and the gray matter of the forebrain, numerous nodules were seen. The cerebellum showed likewise numerous tubercles both in the white and in the gray matter. Microscopic sections showed these masses to consist of essentially the same structure. There was a central area of necrosis, varying in size, containing nuclear débris and surrounded by a zone with probable epithelioid cells and a second outer zone with enlarged, dilated capillaries and slightly larger vessels, associated with a diffuse scattering of small mononuclear cells, and fibroblasts. No giant cells were seen. The meninges showed a very slight exudative and proliferative reaction in the areas overlying the deeper lesions.

The complete anatomic diagnosis was:

Primary: Tuberculous ulcerative tonsillitis and laryngitis; tuberculous cervical lymphadenitis; pulmonary tuberculosis (proliferative); tuberculous ulcerative enteritis and mesenteric lymphadenitis; disseminated tubercles in the viscera; tuberculous meningitis; tuberculomas of the brain; emaciation.

Subsidiary: None.

CASE 5.—*Clinical History.*—S. K., a man, aged 34, was brought into the New Haven Hospital, April 6, 1927, in an unconscious condition. There was no history of tuberculosis in the family, and his past history was negative. In November, 1925, he had a severe attack of grip, which lasted for several weeks and was accompanied by loss of weight. Six months later a diagnosis of pulmonary tuberculosis was made but, as far as is known, tubercle bacilli were not demonstrated in the sputum. He was hospitalized, and in a year gained 20 pounds (9 Kg.). For a year before the final admission, he was troubled with abdominal pain and constipation, but no diarrhea. Ten days before entrance to the hospital, he became aphonic and bedridden, with a gradual onset of stupor, accompanied by delirium. On admission the temperature was 101 F., the pulse 120, and respirations 30; the blood pressure was 118 systolic and 82 diastolic. He was comatose with deep, regular and noisy respirations. The neck was retracted; the eyes moved in a slow lateral nystagmus; the right pupil was smaller than the left, and the reaction to light was poor. The knee jerks were sluggish, while the ankle jerks were increased, though there was no clonus. The Babinski reaction was positive on both sides. Lung examination suggested cavities at both apexes, and numerous moist râles were heard over the chest. The abdomen was tympanitic. Red blood cell examinations were normal; the

white blood count was 23,200, 88 per cent being polymorphonuclear leukocytes. Death occurred eight hours after admission.

Pathologic Report.—Close to the superior midline of the brain, a meningeal growth about 6 mm. in diameter was seen, which closely resembled a meningioma. As the brain was being removed, the basal cisternae were seen to be filled with a creamy yellow fluid. Tubercles were seen along the course of all the cerebral vessels, and more especially in the sylvian fissure on the left. The brain was sectioned and a caseous yellow white, encapsulated mass, 1.5 cm. in diameter, was found to replace a great part of the pons. Microscopically this showed necrosis in the center, with surrounding proliferative reaction. In the subarachnoid space was an exudative type of response.

The complete anatomic diagnosis was as follows:

Primary: Apical pulmonary scars; chronic ulcerative pulmonary tuberculosis; pleural adhesions; tuberculous hilar lymphadenitis; tuberculous ulcerative laryngitis and enterocolitis; generalized tuberculosis, with special involvement of the peritoneum, liver and spleen; tuberculosis of the epididymis (right), vas deferens (right), seminal vesicle (right), prostate, kidneys, and suprarenal (right); tuberculous meningitis; tuberculoma of the pons; emaciation.

Subsidiary: Tumor of the meninges.

CASE 6.—*Clinical History.*—R. J., a woman, aged 25, entered the New Haven Hospital, Sept. 6, 1927, because of pain in the left hip, and discharging sinuses of the chest and ankle. Her family history was negative, and her past illness included only whooping cough in childhood, and an appendectomy in 1921. In December, 1925, she injured her right ankle, which became disclored and swollen. In April, this was incised, but the wound did not heal and continued to discharge a thick yellow pus. In August, 1926, a swelling developed in the right axilla, which was likewise incised and drained. Seven months later, she had four ribs on that side partially removed, but the wound continued to drain. Since September, 1927, she had had a dull pain over the left hip. In June, 1927, she developed a cough with white sputum. Night sweats began the week before admission. On admission the usual responses were slightly more intense than normal. The patient showed considerable undernourishment. On the right side of the chest was seen a discharging, unhealed skin wound extending from the third rib in the anterior axillary line to the seventh rib, with sinuses exuding thin creamy pus. The motion of the right side of the chest was poor, with suppression of breath sounds and diminution of vocal fremitus. Breath sounds over the apex were bronchovesicular, and the lower half of the chest was flat to percussion. A granulating wound was present on the right ankle. The sinuses in the chest were explored, but the discharge continued despite heliotherapy, and the temperature ranged from 100 to 101 F. For a week before death she showed signs of meningeal irritation, with stiffness of the neck, a positive Kernig sign, headache, diplopia and blurred vision. She died following a coma of three days' duration. Examinations of the urine showed acid-fast bacilli; the red blood count was about 4,150,000; hemoglobin, 70 per cent, and white blood count from 10,500 to 15,500, with 88 per cent polymorphonuclears. The blood Wassermann reaction (post mortem) was: alcoholic antigen negative, cholesterinized antigen four plus.

Pathologic Report.—Examination at autopsy of the external aspect of the brain revealed at the base, particularly in the grooves between the pons and the temporal lobes, and in the cerebellopontile region, a small amount of gray white granular exudate. In the pia in the frontal region close to the temporal lobe, and over the tip of the temporal lobe, along the course of the branches of the middle cerebral artery, were seen a few opaque, yellow-white nodules, 1 mm. or so in diameter. A few of these were seen also higher up in the temporal and parietal regions, situated as before close to the vessel walls. The brain was opened by multiple frontal sections. In the left frontal lobe, about 1.5 cm. from the anterior aspect, and about 1 cm. from the superior surface of the lobe, was seen a mass which was roughly spherical, about 1.5 cm. in diameter, and projected in an elongation toward the midline, reaching the fissure between the right and the left hemispheres. The mass was opaque, rather soft, and yellow with a green tinge. In the pons, surrounding the veins of Galen in roughly quadrilateral form, about 1 cm. square, was seen an opaque gray-buff softening, likewise with a green tinge. This involved the prolongation of the meninges surrounding the veins, and also affected the brain substance itself, to some degree. Microscopically, the mass in the left frontal lobe was seen to be quite well circumscribed and surrounded by normal appearing brain tissue. It was composed centrally of an amorphous material staining pink which contained pyknotic nuclear fragments. Surrounding this was a granulation tissue with fibroblasts and new capillaries showing a tendency to whorl formation suggestive of tubercles, especially about the small vessels. There were some fairly large, multinucleated cells with deep pink cytoplasm, and a very few cells suggestive of the Langhans giant cells. A surrounding zone of small mononuclear cells was present. In the region of the veins of Galen the same central area of necrosis was seen, with surrounding round cell and granulation tissue proliferation. The meninges elsewhere showed a subpial exudate of small and large round cells with some fibrin. A small amount of proliferative reaction was seen in some places.

The complete anatomic diagnosis was:

Primary: Tuberculous osteomyelitis (right ribs, right ankle and lumbar vertebrae); tuberculous abscess (left psoas muscle); tuberculous lymphadenitis (right femoral); tuberculous empyema (right); organized and organizing pleurisy (right); organized pleurisy (left); miliary proliferative and caseous pulmonary tuberculosis (bilateral); miliary tuberculosis of the liver, spleen and kidney; tuberculomas (left frontal lobe and pons); tuberculous meningitis.

CASE 7.—*Clinical History.*—M. A., a girl, aged 12 months, was brought to the New Haven Hospital, July 26, 1928, with a diagnosis of empyema. The family history was negative for tuberculosis. The child had been breast fed for two weeks following birth and then placed on a cow's milk and water mixture. In the third week of April, 1928, she had had a cold in the head, with cough and fever, and a diagnosis of pneumonia involving the right lung was made. After two weeks she apparently recovered and seemed well for two more weeks, when furunculosis of the scalp requiring drainage appeared. About two weeks before admission to the hospital, fever and cough again recurred with rapid respiration. On admission to the hospital she was found to be malnourished, pale and irritable. Marked craniotabes, a rachitic rosary and Harrison's groove were present, with a slight left scoliosis. The upper part of the right lung showed signs of consolidation. Shortly after admission the tuberculin test with 0.02 mg. was found positive. Roentgenograms of the chest showed considerable infiltration throughout both lungs. A blood culture was sterile. The white blood cell count showed an elevation to 18,200 on one occasion with 64 per cent polymorphonuclears. A lumbar puncture, September 28, showed 200 lymphocytes and a film developing in six hours, in which many tubercle bacilli were present. During the hospital course both ear drums perforated spontaneously, and furuncles showing a culture of staphylococcus again occurred. By September 15, vomiting became persistent, accompanied by drowsiness, stiffness of the neck, convulsive twitchings of the left side of the body, paralysis of the right facial nerve, spasticity of the whole right side of the body, and bulging of the anterior fontanel. A few days before death, which occurred, October 3, nine weeks after admission, she developed abdominal distention and diarrhea.

Pathologic Report.—A gray, granular, diffusely distributed exudate was found over the vertices of both cerebral hemispheres, within the subarachnoid space, and particularly abundant in the sylvian fissures. In numerous places over the vertices were found gray translucent nodules from 1 to 2 mm. in diameter which closely resembled tubercles. The basal cisterna was completely filled with a gray, crumbly exudate, which also surrounded all the cranial nerves at their exits from the brain. On the superior surface of the left frontal lobe, adjacent to the longitudinal fissure, was an area of intense congestion with softening which extended for a distance of 2 cm. into the cerebral substance, having there an opaque appearance. In the region of the rostral end of the caudate nucleus on the right was a small area of necrosis and hemorrhage, involving the dorsal portion of this nucleus. A small, round yellow opaque area about 4 mm. in diameter was found in the upper and outer portion of the right thalamus. In the rostral portion of the pons a similar area, about 7 mm. in diameter,

was encountered, centrally placed and involving the right and the left pyramidal tracts. This lesion extended backward in an oblique direction through the pons, to lie completely on the left side in a plane through the fifth nerve nucleus. The cerebellum showed two yellow caseous masses, one just posterior to the dentate nucleus beneath the superior surface of the left cerebellar lobe, about 6 mm. in diameter, and another in the right cerebellar substance at the same level. An exudate was seen in the lateral ventricles coating the choroid plexuses and also in the subarachnoid space the entire length of the cord.

Microscopically, the subarachnoid spaces showed an exudative reaction consisting of small mononuclear cells of the lymphocyte type, polymorphonuclear neutrophilic leukocytes and large mononuclear cells, the latter having relatively small nuclei and a large amount of pink-staining cytoplasm. This exudate was present deep in the fissures between the convolutions. There was a proliferative reaction consisting of fibroblasts, epithelioid cells and small round cells, forming in places typical tubercles containing multinuclear giant cells and frequently necrosis. The blood vessels in the pia-arachnoid and in the adjacent brain substance were quite congested. The nodule in the cerebellum showed the structure of the tuberculomas seen in other cases, there being a relatively thin collar of fibroblastic, epithelioid and round cell reaction with fairly frequent congested capillaries. Centrally from this zone was one of clear pink necrosis, followed by one showing a mixture with nuclear fragments. The very center of the mass showed a lighter pink-staining necrosis which appeared to be commencing to liquefy.

The complete anatomic diagnosis was:

Primary: Chronic ulcerative pulmonary tuberculosis (right); tuberculous mediastinal lymphadenitis; ulcerative tuberculous ileocolitis; tuberculous appendicitis; disseminated tubercles in the viscera; tuberculous meningitis; multiple tuberculomas of the thalamus, pons and cerebellum.

Subsidiary: Rickets; scoliosis.

CASE 8.—*Clinical History.*—G. L., a colored girl, aged 13 months, was sent into the New Haven Hospital, Sept. 28, 1928, with a diagnosis of meningitis. There was no family history of tuberculosis. The child was normally delivered at full term, and had never been fed cow's milk. She had been entirely well until two weeks before admission, when she became quite irritable, crying considerably. A week later she began to vomit her feedings, and grew drowsy. There had been no obvious fever, but a slight cough and loss of weight had been noticed. At examination in the hospital the child was extremely drowsy. The breath sounds were rather harsh over the left base, posteriorly. An umbilical hernia was present, and a firm, rounded, fairly well fixed mass about 3 cm. in diameter was felt in the lower right quadrant of the abdomen. A slight vaginal discharge was found. The neck was slightly stiff and all the reflexes were hyperactive, with a transient right ankle clonus, but no Kernig or Babinski signs were present. The anterior fontanel was full but not very tense. The child remained in a stupor with occasional vomiting till October 6, when generalized convulsions commenced, the hands and feet being held in carpopedal spasm. A definite drooping of the left upper eyelid was noticed. She died a few hours after the onset of the convulsions. Laboratory examinations had shown a positive tuberculin reaction with 0.02 mg., a white blood cell count of 17,800, 75 per cent polymorphonuclears, and a spinal fluid showing 4+ globulin and lymphocytes increasing from 120 per cubic millimeter to more than 400 on a subsequent examination.

Pathologic Report.—In the subarachnoid space over all the brain surfaces, but most abundant in the sylvian fissures and interpeduncular cisterna, was found a yellow purulent exudate. The cerebral convolutions were a trifle flattened. Frontal sections of the brain showed congestion throughout. In the lateral wall of the left lateral ventricle was present an area of softening and an area of yellow discoloration strongly suggestive of an exudate. At the level of the rostral end of the corpus striatum, in the gray matter of the left frontal lobe adjacent to the longitudinal fissure, was a bright yellow mass about 1.5 cm. in diameter, surrounded by a zone of intensely congested blood vessels. Another circumscribed similar nodule about 1 cm. in diameter was found in the right parietal lobe in the angle formed by the longitudinal fissure and the superior convexity of the brain at the level of the rostral part of the pons. Many petechial hemorrhages were seen in the other nuclei at this level. The cerebellum showed two more masses, one in the right cerebellar hemisphere, just lateral to the dentate nucleus, 12 mm. in diameter, and another in the left cerebellar lobe in the outermost inferior angle, about 5 mm. in diameter. The subarachnoid space of the entire cord contained the same yellow-green exudate.

Microscopically, there was seen in the subarachnoid spaces a mixed exudative and proliferative reaction, the former consisting of small mononuclear cells, a few neutrophilic polymorphonuclear leukocytes, and numbers of the large mononuclear cells as seen in other cases, the latter consisting of collections, especially around vessels, of masses of epithelioid cells and scattered small mononuclears. In the cerebellar nodule the microscopic picture presented more peripheral proliferation than was seen in many cases, and the nodule was less sharply circumscribed, because of a conglomeration of tubercles. Whorl-like arrangements of epithelioid cells, fibroblasts and small round cells, with not infrequent multinucleate giant cells and abundant capillaries, formed an irregular boundary for the more centrally located necrosis, which was, however, rather subdivided by prolongations of the surrounding proliferation.

The complete anatomic diagnosis was as follows:

Primary: Chronic ulcerative pulmonary tuberculosis and pleural adhesions (left); chronic tuberculous mediastinal, mesenteric and retroperitoneal lymphadenitis; chronic tuberculous peritonitis; chronic tuberculous salpingo-oophoritis; ulcerative tuberculous ileocolitis; disseminated tubercles in the viscera; tuberculous meningitis; multiple tuberculomas of the brain.

Subsidiary: Umbilical hernia.

COMMENT

Van Wagenen,[1] in a publication from Cushing's clinic, reviews the previous literature and reports fourteen cases of intracranial tuberculomas, all of which were verified by microscopic examination, twelve at necropsy. He states that the lesions were single in the great majority of the cases, and all but three located in the cerebellum. This agrees with the usual opinion that the tuberculoma is single and usually in the cerebellum. While the series here presented is perhaps too small a one from which to draw any general conclusions, it is of interest to note that in only one instance was the lesion apparently single, and that the cerebrum was one of the sites of location in seven of the eight cases. My observations are also partly at variance with those of Anderson,[2] who, in the most recent article on the subject, reports twenty-seven instances of proved tuberculomas of the brain among 1,768 brains examined in the necropsy service of the Philadelphia General Hospital. He found that solitary tuberculous lesions constituted about 75 per cent of the total number, though combinations of the process were found in the cerebrum, cerebellum and pons. He states that there is no particular site of predilection, but a review of his data shows that the cerebrum was involved in eighteen. Other instances of tuberculoma have been reported lately by several observers. Stewart[3] cites a calcified tuberculoma of the right half of the cerebellum of two and one-half years' duration in a man, aged 27, while Smith[4] describes a similar lesion in a man, aged 62, which he believes had been there since the age of 4½ years. Dowling[5] reports three cases in which operation was done for tuberculoma, microscopic examination of the removed tissue confirming the diagnosis. One patient, a youth, aged 17, showed a tuberculoma in the right frontal region of the cerebrum; a second, an 18 year old girl, presented

1. Van Wagenen, W. P.: Tuberculoma of Brain, Arch. Neurol. & Psychiat. **17**: 57 (Jan.) 1927.
2. Anderson, F. N.: Tuberculoma of Central Nervous System, Arch. Neurol. & Psychiat. **20**: 354 (Aug.) 1928.
3. Stewart, M. J.: J. Path. & Bact. **30**: 577 (Oct.) 1927.
4. Smith, R. P.: J. Path. & Bact. **30**: 583 (Oct.) 1927.
5. Dowling, E.: Rev. Oto-neuro-oftal. **1**: 78, 1927.

a circumscribed tuberculous lesion in the left parietal region, while the third lesion was found in a woman, aged 38, in the right cerebellar lobe. The first two patients were alive several months after the operations without recurrence of the neurologic symptoms. The third died nine weeks following the operation of pulmonary tuberculosis. Other articles in the last few months describing intracranial tuberculomas, also single, have included two of the optic thalamus, reported by Cornot, Variety and Guedon [6] in men; one by Caussade, Cornil and Girard [7] involving the left quadrigeminal bodies in a child of 3 years, and one of the type called "tuberculoma en plaque" seen by Pardee and Knox,[8] who quote several other articles describing lesions similar to the one they report. It may well be questioned, however, in the light of the observations made in my series, whether a multiple involvement of the brain is not more common than is generally thought. Unless sections through the brain are made at very close intervals, the smaller gross lesions may easily be overlooked.

The incidence of an accompanying tuberculous meningitis varies somewhat in the cases reported. In the twelve cases of Van Wagenen in which postmortem examinations were made, a tuberculous meningitis was present in five, and in one a tuberculous ependymitis. Stewart says that, in 1,000 consecutive necropsies at the Leeds Infirmary, thirty-two instances of intracranial tuberculosis were found, among which tuberculomas were seen alone in three cases, and associated with a meningitis in nine others. Dowling did not find meningitis in the one patient of his series who came to necropsy. Of the two cases reported by Cornot, Variety and Guedon, one showed an associated tuberculous meningitis. Twenty-one of the twenty-seven cases of tuberculoma described by Anderson showed a definite tuberculous meningitis. Of my own eight cases, seven showed a definite reaction in the meninges which was verified microscopically. In the other necropsy, this reaction was very slight and was found only on microscopic examination.

The opinions of the earlier authors that tuberculomas were most frequently seen in children are not substantiated by the more recent articles, which report a majority of the cases in adults. The data presented here do not throw much light on this subject, since the incidence was equally divided between adults and infants.

SUMMARY

1. Multiple involvement was seen in most of the eight cases of tuberculoma of the brain reported here.

2. It is of interest to note that single tuberculomas occurred less frequently in this series than in other series reported in the literature. The frequent occurrence of tuberculous meningitis in this series is in marked contrast to the smaller incidence reported by some other authors.

NOTE.—Since the manuscript of this article was sent to the publisher, one other instance of intracranial tuberculoma has come to necropsy at the New Haven Hospital. The patient was L. C., a colored man, aged 35. A tuberculoma occupying the frontal lobes on either side of the median longitudinal fissure and measuring about 3 cm. by 4 to 5 cm., as well as a smaller lesion in the left occipital lobe, was found. A tuberculous meningitis was likewise seen, both grossly and microscopically.

6. Cornot, P.; Variety, M., and Guedon, P.: Bull. et mém. Soc. méd. d. hôp. de Paris **52**: 837, 1927.
7. Caussade, L.; Cornil, L., and Girard, J.: Rev. neurol. **1**: 83 (Jan.) 1928.
8. Pardee, Irving; and Knox, Leila C.: Tuberculoma en plaque, Arch. Neurol. & Psychiat. **17**: 231 (Feb.) 1927.

Special Article

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1928

SEVENTEENTH ANNUAL REPORT [1]

This report concerns the same eighty-one cities of more than a hundred thousand population that were discussed in the report for 1927.[2]

Four of the twelve New England cities (table 1) had no typhoid deaths during 1928; this is the largest number of cities in a single group ever to make such a record. For New Haven and Springfield it is the second successive year; Lowell also had a clear record once before (in 1925). Eight of the cities have 1928 rates below 1.0 (as against six such cities in 1927). Four of the cities with 1928 rates below 1.0 had similar rates in 1927; Springfield and Bridgeport have had rates below 1.0 for the last three years. Boston's rate (0.6) is the lowest ever recorded for that city (1.0 in 1923 was its previous low point). The three cities which had the highest 1927 rates in this group (Lowell, Worcester and New Bedford) have conspicuously lower rates in 1928, all below 1.0. Though Fall River's 1928 rate (4.5) is higher than any rate in the New England group in 1926 and higher than the 1921-1925 average of any New England city, it is the only city in the group with a rate of over 2.0, whereas in recent years there have always been three or four cities with rates over 2.0. The group average (0.90) for the New England cities (table 12) for 1928 is the lowest ever recorded for New England and also the lowest in the country. The New England rate was lowest also in 1926 and 1927.

TABLE 1.—*Death Rates of Cities in New England States from Typhoid per Hundred Thousand Population*

	1928	1927	1926	1921-1925	1916-1920	1911-1915	1906-1910
Lowell	0.0	2.6	0.9	2.4	5.2	10.2	13.9
Lynn	0.0	0.9	3.8	1.6	3.9	7.2	14.1
New Haven	0.0	0.0	2.2	4.4	6.8	18.2	30.8
Springfield	0.0	0.0	0.7	2.0	4.4	17.6	19.9
Worcester	0.5	3.1	0.5	2.3	3.5	5.0	11.8
Boston	0.6	1.1	1.8	2.2	2.5	9.0	16.0
Bridgeport	0.6†	0.6	0.6	2.2	4.8	5.0	10.3
New Bedford	0.8‡	3.3	0.7	1.7	6.0	15.0	16.1
Hartford	1.2	1.8	1.2	2.5	6.0	15.0	19.0
Cambridge	1.6	0.8	4.9	4.3	2.5	4.0	9.8
Providence	1.7	0.4	0.7	1.8	3.8	8.7	21.5
Fall River	4.5	2.3	0.8	2.3	8.5	13.4	13.5

* Population figures furnished by the health department: 112,759.
† Population figures furnished by the health department: 155,000.
‡ Population figures furnished by the health department: 121,629.

Two cities of the Middle Atlantic group (table 2) had no typhoid deaths in 1928—the same number as in 1927, one less than in 1926. It is the third consecutive

1. The preceding articles were published, May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777; April 5, 1919, p. 997; March 6, 1920, p. 672; March 26, 1921, p. 860; March 25, 1922, p. 890; March 10, 1923, p. 691; Feb. 2, 1924, p. 389; March 14, 1925, p. 813; March 27, 1926, p. 948; April 9, 1927, p. 1148; May 19, 1928, p. 1624.

2. The deaths from typhoid in each city are those reported to us by the respective health departments. The rates have been calculated on the basis of the midyear 1928 population as estimated by the U. S. Bureau of the Census. In ten instances in which such estimates were not available, the midyear population figures were furnished by the health departments of the respective cities. In one instance, when the health department was not heard from, the rate was figured on the basis of the 1927 midyear population.

year without a typhoid death for Yonkers and the fifth such year in its history (cf. 1920, 1922).

Of the eighteen cities in this group, nine have lower rates in 1928 than in 1927, and six of these nine have had a continuous decline beginning with 1926. Among

TABLE 2.—*Death Rates of Cities in Middle Atlantic States from Typhoid per Hundred Thousand Population*

	1928	1927	1926	1921-1925	1916-1920	1911-1915	1906-1910
Elizabeth	0.0*	0.9	1.0	2.4	3.3	8.0	16.6
Yonkers	0.0	0.0	0.0	1.7	4.8	5.0	10.3
Syracuse	0.5	1.5	1.1	2.3	7.7	12.3	15.6
Jersey City	0.6	1.2	1.9	2.7	4.5	7.2	12.6
Albany	0.8	3.3	0.0	5.6	8.0	18.6	17.4
Philadelphia	0.8	1.4	1.9	2.2	4.9	11.2	41.7
Rochester	0.9	1.2	4.0	2.1	2.9	9.6	12.8
Newark	1.0	1.3	1.5	2.3	3.3	6.8	14.6
New York	1.4	1.3	1.9	2.6	3.2	8.0	13.5
Paterson	1.4	0.0	1.4	3.3	4.1	9.1	19.3
Scranton	1.4	0.7	4.2	2.4	3.8	9.3	31.5
Utica	1.9	2.9	0.0	3.9†			
Trenton	2.1	1.5	2.2	8.2	8.6	22.3	28.1
Buffalo	2.3	2.4	5.0	3.9	8.1	15.4	22.8
Reading	2.6	1.7	2.6	6.0	10.0	31.9	42.0
Pittsburgh	3.4	1.9	2.7	3.9	7.7	15.9	65.0
Camden	4.4	0.7	4.6	5.9	4.9	4.5	4.0
Erie	5.3‡	1.5	0.8	2.3	6.9	49.0	46.6

* Population figures furnished by the health department: 115,333.
† Data for 1925 only.
‡ Population figures furnished by the health department: 133,000.

the latter is Philadelphia, whose 1928 rate of 0.8, the lowest in its history and less than half of its 1926 rate, bears comparison with the rates of Cleveland (0.6) and Chicago (0.5). Of the nine cities constituting the lower half of the table in 1928, six were also in the lower half in 1927. The 1928 rates of Pittsburgh, Camden and Erie are higher than any of the 1927 rates in this group. Camden, after a 1927 rate (0.7) which was far the lowest in its history (the next to the lowest being the 1919 rate of 2.7), reverted in 1928 to its old level with a rate of 4.4. Erie, after low rates in 1926 and 1927 (0.8 and 1.5), has a 1928 rate of 5.3, double its 1921-1925 average (2.3) and almost as high as its 1916-1920 average (6.9). It is the highest rate that has occurred in the Middle Atlantic group since 1925. For the first time in recent years, the rates of New York and Pittsburgh show slight increases.

The 1928 typhoid death rate in the Middle Atlantic cities as a whole (table 12) is a trifle higher (1.50)

TABLE 3.—*Death Rates of Cities in South Atlantic States from Typhoid per Hundred Thousand Population*

	1928	1927	1926	1921-1925	1916-1920	1911-1915	1906-1910
Norfolk	1.6	1.1	1.7	2.8	8.8	21.7	42.1
Jacksonville	2.1	7.2	8.8				
Washington	2.7	1.8	2.5	5.4	9.5	17.2	36.7
Richmond	3.1	0.0	2.6	5.7	9.7	15.7	34.0
Baltimore	3.8	1.8	4.7	4.0	11.8	23.7	35.1
Wilmington	4.7	3.2	2.4	4.7	25.8*	23.2†	33.0
Atlanta	7.4	14.0	17.2	14.5	14.2	31.4	58.4

* 1916 only.
† Lacks 1913.

than the 1927 rate (1.41), representing 177 deaths as against 166 in the preceding year.

While the 1928 total typhoid death rate (3.72) for the South Atlantic cities as a group (table 12) is somewhat higher than the 1927 rate (3.39), the highest rate in the group (table 3) in 1928 is decidedly lower than in 1927 or any preceding year. Atlanta, for the first time since these summaries were begun with the single exception of 1919, when its rate was 9.6, has a typhoid death rate below 10.0; its 1928 rate (7.4) is about half of its 1927 rate (14.0). It is still, however, considerably higher than the other rates in the South Atlantic group; Atlanta is the only city of the group to fall below first rank in 1928 (table 9). Jacksonville, which had 1926 and 1927 rates of 8.8 and 7.2, respectively, has in 1928 the second lowest rate in the group (2.1). Atlanta and Jacksonville are the only cities in the group with lower rates in 1928 than in 1927. The increases in the other five cities, however, are not important, the largest being that of Richmond, which in 1927 had no typhoid deaths and in 1928 had six, giving a rate of 3.1. Norfolk has regained its customary place at the head of the table (last year yielded to Richmond), but with a rate slightly higher than in 1927. Although Baltimore and Washington in 1927 had about the same rates as Boston and New York, in 1928 the Baltimore and Washington rates of 3.8 and 2.7, respectively, are at least double those of Boston and New York (0.6 and 1.4). Though Baltimore's 1928 rate is more than twice its own 1927 rate (3.8 as against 1.8), the Maryland Department of Health, in the report of its Bureau of Sanitary Engineering for 1928, states that "the year 1928 shows by far the lowest typhoid fever incidence in the history of the state. The typhoid and paratyphoid fever mor-

TABLE 4.—*Death Rates of Cities in East North Central States from Typhoid per Hundred Thousand Population*

	1928	1927	1926	1921-1925	1916-1920	1911-1915	1906-1910
Youngstown	0.0	2.4	0.0	7.2	19.2	29.5	35.1
Akron	0.4*	2.8	1.5	2.4	10.6	21.0	27.7†
Chicago	0.5	0.7	0.8	1.4	2.4	8.2	15.8
Cleveland	0.6	1.0	1.4	2.0	4.0	10.0	15.7
Grand Rapids	0.6	1.9	1.3	1.9	9.1	25.5	29.7
Milwaukee	0.7	0.9	1.7	1.6	6.5	13.6	27.0
Canton	0.8	0.0	3.6	3.3	8.9		
Detroit	1.0	1.2	2.2	4.1	8.1	15.4	22.8
Cincinnati	1.7	3.9	2.7	3.2	3.4	7.8	30.1
Columbus	1.7	2.0	1.7	3.5	7.1	15.8	40.0
Dayton	2.7	1.7	2.3	3.3	9.3	14.8	22.5
Flint	3.4	2.1	0.7	4.6	22.7	18.8	46.9
Indianapolis	3.6	1.3	5.4	4.6	10.3	20.5	30.4
Toledo	4.8	2.9	4.7	5.8	10.6	31.4	37.5

* Population figures furnished by the health department: 225,000.
† Data for 1909 and 1910 only.

tality for the past year was 5.2 per 100,000 for the state at large. . . . Ten years ago the rate for Maryland was 16.9." Of the seven cities in this group, five have rates between 2.0 and 5.0 and are therefore in the first rank (table 9), one (Norfolk) is on the honor roll and one (Atlanta) in the second rank.

As in previous years, in 1928 the South Atlantic group average (3.72) is decidedly lower than the group averages for the other southern groups (West South Central cities, 6.18; East South Central cities, 7.68).

The total typhoid death rate (table 12) in the group of East North Central cities in 1928 is a little lower than in 1927 (1.10 as against 1.31) and lower than in 1925 or 1926 (2.19, 1.69). Of the fourteen cities in the group, nine have lower rates in 1928 than in 1927 (table 4), and four of the nine have had continuous declines beginning in 1926 (one, Detroit, has had a steady decrease since 1920). Youngstown's rate of 0.0 makes the third such rate in successive years in this group, Youngstown having attained it also in 1926 and Canton in 1927. The highest 1928 rate (Toledo, 4.8), however, is higher than the corresponding 1927 rate (Cincinnati, 3.9), and there are three cities with

1928 rates of over 3.0, whereas there was only one such rate in 1927. Toledo, at the foot of this table in 1928, has been either at the foot or next to the foot every year since 1924, when these summaries first grouped the cities geographically. Chicago in 1928 lowered its excellent 1927 rate of 0.7 with a rate of 0.5, this being its third successive year with a rate below 1.0. Cleveland and Detroit, both with very low rates in 1927 (1.0 and 1.2), have still lower rates in 1928 (0.6 and 1.0).

TABLE 5.—*Death Rates of Cities in East South Central States from Typhoid per Hundred Thousand Population*

	1928	1927	1926	1921-1925	1916-1920	1911-1915	1909-1910
Louisville	2.7	3.1	6.7	4.9	9.7	19.7	52.7
Birmingham	7.2	12.9	8.5	10.8	31.5	41.3	41.7
Memphis	11.6	14.5	19.2	18.9	27.7	42.5	35.3
Nashville	15.0	16.0	35.0	17.8	20.7	40.2	61.2

The East South Central cities as a group (table 12) have a much lower typhoid death rate in 1928 (7.68) than in 1927 (10.07). It is still, however, the highest group rate in the country. Every one of the four cities has a lower rate in 1928 than in 1927, the 1928 range being 2.7-15.0 as against a 1927 range of 3.1-16.0. The order of the cities' rates is the same as usual, Louisville standing at the head of the table with rates well below the others, and Birmingham holding second place. The reductions in Birmingham and Memphis are especially notable, Birmingham's rate declining from 12.9 in 1927 to 7.2 in 1928, and Memphis' 1927 rate being 14.5 and its 1928 rate 11.6. None of these cities are on the honor roll (table 9); one is in the first rank, one in the second and two in the third. The Memphis and Nashville rates are the highest in the country, as they were also in 1924, 1926 and 1927.

TABLE 6.—*Death Rates of Cities in West North Central States from Typhoid per Hundred Thousand Population*

	1928	1927	1926	1921-1925	1916-1920	1911-1915	1906-1910
Duluth	0.0	2.7	0.8	1.7	4.4	19.8	45.5
Minneapolis	0.2	0.7	1.4	1.9	5.0	10.6	32.1
Des Moines	1.3	3.3	2.7	2.2	6.4	15.9	23.7
St. Paul	1.3*	2.8	1.2	3.4	3.1	9.2	12.8
Kansas City, Kan.	1.7	0.0	4.3	5.0	9.4	31.1	74.5†
St. Louis	2.2	1.9	2.3	3.9	6.5	12.1	14.7
Kansas City Mo.	2.3	2.9	3.5	5.7	10.6	16.2	35.6
Omaha	2.7	0.9	1.8	3.3	5.7	14.9	40.7

* Population figures furnished by the health department: 298,000.
† Lacks data for 1906 and 1907.

In the West South Central group (table 7), four of the eight cities had lower rates in 1928 than in 1927, substantial improvement appearing in San Antonio (a decrease from 5.7 to 2.3) and especially in Tulsa with a 1928 rate of 3.5 as against a 1927 rate of 8.7; Tulsa's 1928 rate is only a fourth of its 1926 rate (14.3). On the other hand, whereas all the cities in this group in 1927 had rates under 9.0, there are two rates over 9.0 in 1928 (Oklahoma City and El Paso). In 1927, seven of the cities fell into the second rank (table 9), the eighth into first; in 1928, two are in the first rank, four are in the second, and two are in the third. The group rate (table 12) for these West South Central cities in 1928 (6.18) is a little lower than the 1927 rate (6.71), both being far below the rates in 1926 and 1927 (13.27 and 11.69), both being also next to the highest group rates in the country.

Tacoma, which stood at the foot of the table of the Mountain and Pacific cities (table 8) in 1927 and next to the foot in 1926, heads the list in 1928 with a record of no typhoid deaths, the second city in this group ever to attain this distinction (the other was Spokane in 1919). Moreover, Tacoma in 1928 had no diphtheria deaths; no other city of these summaries has ever reported a clear record for both of these diseases in the same year. Five of the ten cities have somewhat higher rates in 1928 than in 1927, and two of the 1928 rates are higher than any of the 1927 rates. The rate for the group as a whole (table 12) is a trifle higher in 1928 (1.92) than in 1927 (1.74).

TABLE 7.—*Death Rates of Cities in West South Central States from Typhoid per Hundred Thousand Population*

	1928	1927	1926	1921-1925	1916-1920	1911-1915	1906-1910
San Antonio	2.3	5.7	7.8	9.3	23.3	29.5	35.9
Tulsa	3.5	8.7	14.3	16.2*			
Dallas	5.0	6.6	8.9	11.2	17.2		
Houston	6.0†	5.6	6.0	7.6	14.2	38.1	49.5‡
Fort Worth	7.0	4.3	10.7	6.1	16.3#	11.9	27.8
New Orleans	7.2	8.0	18.6	11.6	17.5	20.9	35.6
Oklahoma City	10.0¶	6.4					
El Paso	10.2	7.9	9.2	10.8	30.7	42.8	

* Lacks data for 1921 and 1922.
† Population figures furnished by the health department: 300,000.
‡ Data for 1910 only.
# Lacks data for 1918 and 1919.
¶ Rate calculated from population figures for 1927: 140,000.

TABLE 8.—*Death Rates of Cities in Mountain and Pacific States from Typhoid per Hundred Thousand Population*

	1928	1927	1926	1921-1925	1916-1920	1911-1915	1906-1910
Tacoma	0.0	2.8	3.8	3.7	2.9	10.4	19.0
Oakland	1.1	2.2	0.8	2.0	3.8	8.7	21.5
Seattle	1.3	2.7	2.3	2.6	2.9	5.7	25.2
Los Angeles	1.5*	1.0	1.1	3.0	3.6	10.7	19.0
San Diego	1.7	0.9	0.9	1.6	7.9	17.0	10.8
Spokane	1.8	0.9	6.5	4.4	4.9	17.1	50.3
Portland	2.1†	2.1	2.5	3.5	4.5	10.8	23.2
Denver	2.7	2.8	3.5	5.1	5.8	12.0	37.5
Salt Lake City	2.9	2.2	0.7	6.0	9.3	13.2	41.1
San Francisco	3.4	1.7	2.5	2.8	4.6	13.6	27.3

* Population figures furnished by the health department: 1,400,000.
† Population figures furnished by the health department: 336,163.

Nine of the eighty-one cities concerned in this study (table 9) had no typhoid deaths during 1928 (there were seven such cities in 1927). Four of the nine have had similar records once before, and the fifth (Yonkers) four times before. Four of them are New England cities and two belong to the Middle Atlantic group. Every geographic division is represented among them except the three Southern groups.

Of the forty-five cities on the honor roll (rates below 2.0) in 1928, thirty were there also in 1927. The six cities with populations of more than a million (Chicago,

Cleveland, Detroit, Los Angeles, New York City, Philadelphia) are all on the honor roll. Four geographic divisions (New England, East North Central, West North Central, Mountain and Pacific) have all their cities on the honor roll or in the first rank. Erie

TABLE 9.—*Death Rates from Typhoid in 1928*

Honor Roll (from 0.0 to 1.9 Deaths per Hundred Thousand)			
DULUTH	0.0	Philadelphia	0.8
ELIZABETH	0.0	Rochester	0.9
LOWELL	0.0	Detroit	1.0
LYNN	0.0	Newark	1.0
NEW HAVEN	0.0	Oakland	1.1
SPRINGFIELD, MASS.	0.0	Hartford	1.2
TACOMA	0.0	Des Moines	1.3
YONKERS	0.0	St. Paul	1.3
YOUNGSTOWN	0.0	Seattle	1.3
Minneapolis	0.2	New York	1.4
Akron	0.4	Paterson	1.4
Chicago	0.5	Scranton	1.4
Syracuse	0.5	Los Angeles	1.5
Worcester	0.5	Cambridge	1.6
Boston	0.6	Norfolk	1.6
Bridgeport	0.6	Cincinnati	1.7
Cleveland	0.6	Columbus	1.7
Grand Rapids	0.6	Kansas City, Kan.	1.7
Jersey City	0.6	Providence	1.7
Milwaukee	0.7	San Diego	1.7
Albany	0.8	Spokane	1.8
Canton	0.8	Utica	1.9
New Bedford	0.8		
First Rank (from 2.0 to 4.9)			
Jacksonville	2.1	Salt Lake City	2.9
Portland, Ore.	2.1	Richmond	3.1
Trenton	2.1	Flint	3.4
St. Louis	2.2	Pittsburgh	3.4
Buffalo	2.3	San Francisco	3.4
Kansas City, Mo.	2.3	Tulsa	3.5
San Antonio	2.3	Indianapolis	3.6
Reading, Pa.	2.6	Baltimore	3.8
Dayton	2.7	Camden	4.4
Denver	2.7	Fall River	4.5
Louisville	2.7	Wilmington	4.7
Omaha	2.7	Toledo	4.8
Washington	2.7		
Second Rank (from 5.0 to 9.9)			
Dallas	5.0	Birmingham	7.2
Erie	5.3	New Orleans	7.2
Houston	6.0	Atlanta	7.4
Fort Worth	7.0		
Third Rank (above 10.0)			
Oklahoma City	10.0	Memphis	11.6
El Paso	10.2	Nashville	15.0

is the only Northern city among the eleven cities comprising the second and third ranks, the Southern groups being represented as follows: West South Central, six times; East South Central, three times; South Atlantic, once. Erie and Fort Worth are the only cities in the second and third ranks in 1928 which were not in them in 1927.

Twenty-five of the cities have rates below 1.0, as against twenty in 1927 (table 10). There are in 1928

TABLE 10.—*Number of Cities with Various Typhoid Death Rates*

	No. of Cities	10.0 and Over	5.0 to 9.9	2.0 to 4.9	1.0 to 1.9	0.1 to 0.9	0.0
1906-1910	74	72	2	0	0	0	0
1911-1915	75	55	18	2	0	0	0
1916-1920	77	19	29	29	0	0	0
1921-1925	79	8	15	46	10	0	0
1926	80	6	10	27	19	14	4
1927	81	4	8	28	23	13	7
1928	81	4	7	25	20	16	9

only four cities of the eighty-one with rates over 10.0, whereas the 1906-1910 averages of seventy-two of seventy-four cities were over 10.0.

The total typhoid death rate for seventy-four cities in 1928 (table 11) is a little lower than in 1927 (1.89 as against 1.96). There were in these seventy-four cities during 1928 a total of 627 typhoid deaths. If the typhoid death rate of 1910 (20.58) had prevailed in these cities in 1928, there would have been 6,815 deaths, almost eleven times the number that actually occurred.

The different groups of cities (table 12) if ranked according to their 1928 rates would be in about the same order as in all the years beginning with 1925: the New England, East North Central, Middle Atlantic, West North Central and Mountain cities all have low group rates very nearly alike (in 1928 all are below 2.0), while the three Southern groups rank in the following order, as they have every year beginning with 1925: South Atlantic, West South Central, East South

TABLE 11.—*Total Typhoid Rate for Seventy-Four Cities, 1910-1928* *

	Population	Typhoid Deaths	Typhoid Death Rate per 100,000
1910	22,286,000	4,586	20.58
1911	22,916,700	3,883	16.94
1912	23,535,450	3,077	13.07
1913	24,151,936	3,222	13.34
1914	24,776,777	2,744	11.07
1915	25,392,422	2,373	9.34
1916	25,928,745	2,154	8.31
1917	26,528,213	1,963	7.40
1918	26,737,190†	1,796†	6.72
1919	27,373,579†	1,141†	4.17
1920	28,182,528	1,074	3.81
1921	28,509,752	1,130	3.96
1922	28,947,007	955	3.30
1923	29,580,000	936	3.16
1924	30,155,014	937	3.11
1925	30,938,501	1,067	3.45
1926	31,667,424	895	2.83
1927	32,492,123	638	1.96
1928	33,116,784	627	1.89

* The following seven cities are omitted because data for the full period are not available: Canton, Dallas, Jacksonville, Oklahoma City, Tulsa, Utica, Wilmington.
† Lacks data for Fort Worth.

Central. The rates of the two latter (6.18 and 7.68) are considerably higher, in 1928 as in the other years, than the South Atlantic rate (3.72). The 1928 rates in the three Southern groups are far below their rates

TABLE 12.—*Total Typhoid Death Rate per Hundred Thousand Population in Eighty-One Cities According to Geographic Divisions*

	Population	1928 Typhoid Deaths	1928 Typhoid Death Rate	1927 Typhoid Deaths	1927 Typhoid Death Rate	1926 Typhoid Death Rate	1925 Typhoid Death Rate
New England	2,548,088	23	0.90	32	1.26	1.51	2.37
Middle Atlantic	11,790,733	177	1.50	166	1.41	2.09	2.97
South Atlantic	2,285,300	85	3.72	76	3.39	5.38	5.71*
East North Central	8,512,300	94	1.10	109	1.31	1.69	2.19
East South Central	881,600	68	7.68	86	10.07	14.47	14.30
West North Central	2,602,800	43	1.65	47	1.86	2.22	3.31
West South Central	1,764,200	109	6.18	114	6.71	11.69†	13.27†
Mountain and Pacific	3,750,263	72	1.92	61	1.74	1.98	2.19

* Lacks data for Jacksonville.
† Lacks data for Oklahoma City.

for 1925 and 1926, and, in the case of the East South Central cities, far below the 1927 rate as well. The progressive decline in the rates of seven of the eight groups for the three years 1925-1927 has been broken in 1928 in three instances (Middle Atlantic, South Atlantic, Mountain and Pacific). The increases, however, are small, the largest being that of the South Atlantic group from 3.39 to 3.72.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION APPROVES THE FOLLOWING REPORT. THIS REPORT HAS ALSO BEEN ENDORSED BY THE COUNCIL ON PHARMACY AND CHEMISTRY.

H. J. HOLMQUEST, Secretary.

THE RENTAL OF RADIUM

The value of radium in the treatment of many lesions is gradually becoming recognized. There already exists substantial evidence that, in a few diseases, such as carcinoma of the uterine cervix, basal-cell carcinoma of the skin, and certain benign conditions, such as nevi, radium treatment, in expert hands, is often superior to all other methods of treatment. Realization of the advantages of radium has been delayed by lack of general knowledge of its possibilities and limitations, and this has been the result of exaggerated claims on the one hand and natural skepticism, ignorance or prejudice on the other.

No method of treatment can be expected to yield the best results unless it is employed with skill and a full understanding of the possibilities and limitations and of the basic principles involved. This is eminently true of radium, the use of which, without a thorough knowledge of its properties and characteristics, may lead to injurious or disastrous consequences. Moreover, the employment of radium must be adapted to the character, size and situation of the lesion to be treated. The first step, therefore, must be a thorough examination of the patient and an accurate diagnosis of his condition. This is absolutely essential to establish the technical conditions best suited to each individual case. Attempts to treat patients by any so-called routine technic can yield only inferior results or lead to common failure and occasional catastrophe.

During the last few years some of the companies supplying radium, as well as a few individual radiologists, have undertaken to prepare and to furnish radium to physicians on a rental basis. Rental has not been limited to radiologists, who might be expected to know how to make proper use of the radium, but the intent of this service is to enable any physician to treat his own patients. The physician is requested to furnish as complete information as possible concerning the patient and the site, size and character of the lesion. On the basis of this information, the radium specialist of the company, who may or may not be a physician, undertakes to have the radium prepared and forwarded to the patient's physician, with detailed instructions for its use. To any one familiar with the intricacies and difficulties of radium therapy it must be obvious that the indiscriminate rental of radium to any physician may be a dangerous practice and one not calculated to enhance the welfare of the public. Who, for example, would approve of an instrument house shipping a set of surgical instruments with directions for use in order that a general practitioner might do a resection in a case of carcinoma of the stomach? The effective use of radium therapy implies just as much technical knowledge and experience as proper surgery. This has been brought forcefully to the attention of the Council on Physical Therapy of the American Medical Association by letters received from physicians in different parts of the country calling attention to the fact that the rental of radium is inimical to the welfare of many patients and that treatment of this kind should be given only by those skilled and experienced in the use of radioactive substances.

However, this is only one side of the situation. Certain physicians, surgeons, gynecologists, dermatologists and others sometimes have patients suffering from conditions for which radium is advisable, and who have not available the services of a qualified radiologist. Many physicians have acquired some experience in the practical application of radium in the treatment of certain benign conditions, as simple menorrhagia or metrorrhagia, and nevi. Under such conditions it may be disadvantageous to patients if radium could not be made available through rental or otherwise.

Having considered all aspects of the question, the Council feels that the rental of radium to physicians cannot be entirely condemned; but, since the physician renting the radium must assume full legal and moral responsibility for the diagnosis and treatment of his patients, the Council does condemn the system of "mail-order" and telephone diagnosis and the type of treatment with which such rental has come to be associated.

Council on Pharmacy and Chemistry

PRELIMINARY REPORTS OF THE COUNCIL

THE COUNCIL AUTHORIZED PUBLICATION OF THE FOLLOWING PRELIMINARY REPORT AND POSTPONED ACCEPTANCE OF AMNIOTIN-SQUIBB TO AWAIT ACCEPTABLE EVIDENCE FOR THE VALUE OF THE PRODUCT IN OVARIAN HYPOFUNCTION IN WOMEN.

W. A. PUCKNER, Secretary.

AMNIOTIN-SQUIBB (OVARIAN HORMONE-SQUIBB)

The biochemical researches of recent years have isolated and purified extracts from the ovaries which on injection into spayed rats bring on changes in the vagina characteristic of estrus in these animals. A few investigators have also reported that these extracts, on repeated injections into spayed monkeys, bring on menstruation in these monkeys. Extracts having similar actions on spayed rats have been prepared from other tissues such as the placenta, the amniotic fluid and even from the urine of pregnant animals, as well as nonpregnant females and normal males. The influence of these extracts on the symptoms of ovarian hypofunction in women has been neither striking nor consistent, but the stage has at least been reached where an extract having this definite effect on the spayed rat and the spayed monkey is sufficiently purified for experimental clinical application. The ovarian hormone-Squibb, prepared from the ovary, has been withdrawn from the market, and Squibb & Sons present Amniotin, prepared from the fetal fluid of cattle. The fetal fluid is extracted with alcohol, and the extract is then concentrated under reduced pressure to remove the alcohol. A series of fractionations is made using various concentrations of alcohol, acetone and ether, to remove the proteins, cholesterol and phospholipins. The final product is soluble in water and withstands heating at 125 F. for a prolonged period with no loss of potency, but no information is available as to possible loss of potency with time. The preparation is said to be free of protein and cholesterol; it contains traces of phosphorus. It is said to be nontoxic for rats and monkeys. It is standardized by the Allen-Doisy method on spayed rats and marketed in two strengths, 1 cc. of the extract containing 10 and 20 Allen-Doisy rat units, respectively. Amniotin is to be administered subcutaneously since it has little or no effect when given by mouth even in very large doses.

It appears that Amniotin is sufficiently purified and standardized to be used for careful experimental therapy in clear cases of ovarian hypofunction in women. It seems probable that a conclusive answer to the question of the clinical value of Amniotin and similar preparations will be reached sooner if this experimental therapy is limited to clearly diagnosed ovarian hypofunctions and not extended to such fields as obesity and menstrual headaches, phenomena not clearly related to ovarian disorders.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED THE PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, Secretary.

ATOMIDINE NOT ACCEPTABLE FOR N. N. R.

In the *Journal of the American Dental Association* for January, 1929, there appeared a report and an analysis of "Atomidine." By permission of the editor of that journal, there is reprinted below the analysis and most of the report. In consideration of the evidence presented in this report, the Council on Pharmacy and Chemistry declares Atomidine unacceptable for New and Nonofficial Remedies because it is an unscientific mixture of semisecret composition marketed under a nondescriptive name, with therapeutic claims that are unwarranted and grossly exaggerated, and in a way to lead the public to place false dependence on it.

The Council on Pharmacy and Chemistry takes this opportunity to express to the American Dental Association its hearty appreciation for the cooperation which this body is now giving to this Council for its reports on medicinal preparations which are exploited to the medical profession as well as to the dental profession.

"Atomidine, 'a water soluble Iodine Compound' is offered to the dental and medical professions by Schieffelin and Company, New York. It is claimed that

'Atomidine is a preparation standardized to liberate 1 per cent of iodine in an Atomic or Nascent form when in contact with tissue.'

"Beyond this and similar generally uninforming statements, no indication as to the qualitative or quantitative chemical composition of Atomidine appears in the advertising material.

"In a booklet sent to physicians under the heading 'Iodine in the Atomic State,' appears the following:

'Atomidine is the outcome of twelve years of research and its production bids fair to create greater possibilities than had been anticipated. The therapeutic potentialities of iodine in an atomic state not only exceed those of pre-existing forms of this remedy, but, in addition, reactions appear that were unknown in the latter.'

'Atomidine might well be considered a new drug, and therefore cannot be too closely compared with the known forms of iodine.'

'Because of its ready assimilation, minute doses are sufficient to produce therapeutic effects. This is quite contrary to the iodides of which nearly eighty per cent are excreted unchanged. No massive dosing becomes necessary, thereby obviating depressant and toxic reactions.'

"In this connection, it might be pointed out that, according to such an authority as Prof. Torald Sollmann, dean of the Medical School of Western Reserve University:[1] 'Elementary iodine is eventually converted into iodide, but first combines with the proteins of the cells. . . .' And 'Free iodine cannot be formed at the alkaline reaction of the tissues; and if introduced, it cannot persist but is rapidly converted into iodide and protein compounds.' Hence, if free or 'atomic' iodine is liberated as claimed by the Atomidine promoters, it acts in the system as an iodide.

"Further claims of a medical character made for Atomidine are:

'Atomidine exerts a true germicidal effect in infections of the body.'

'It is an active and efficient gastrointestinal antiseptic.'

'It has the property of reducing blood-pressure in case of hypertension.'

'Atomidine is an efficient diuretic and urinary antiseptic, acting in either an acid or alkaline medium.'

'It undoubtedly activates general metabolism, stimulates endocrine function and cell secretion. . . .'

"As far as our records go, all of these claims are made without a scintilla of printed scientific evidence to substantiate the claim that Atomidine is superior or even the equal to tincture of iodin or of the other iodin products of the Pharmacopeia.

"It has already been mentioned that Atomidine is heralded as the result of twelve years of research. Yet, recourse to the chemical and medical literature for the past twelve year period fails to bring out published data on the chemical composition, and evidence for the claimed advantages of Atomidine over pharmacopeial iodin preparations.

In its literature, Atomidine is stated to be 'controlled to liberate 1% Atomic Iodine in solution.' But, in a booklet circularized to the medical profession, we read the following contradictory statement:

'Iodine in the nascent form does not permit of chemical analysis. It is one of Nature's fleeting, transitory states.'

1. A Manual of Pharmacology, ed. 3, pp. 883 and 887.

"As no information concerning the qualitative and quantitative composition of Atomidine was given, it was submitted to the A. D. A. Chemist for investigation.

CHEMIST'S REPORT

'Three (3) original specimens of Atomidine (Schieffelin and Company, New York), price, $1.00 each, were purchased on the open market for examination. The bottle contained approximately 50 c.c. of a clear, slightly yellow liquid, possessing a decidedly acid reaction. The specific gravity at 20 C. was 1.021. Qualitative tests indicated the presence of chlorid (Cl^-), chlorin (Cl^+) and iodin in the oxidized form (electropositively charged iodin) such as is present in iodates or iodin chlorid, and sodium. Sulphate, calcium, potassium and other metals were not found. Organic matter was not indicated.

'The specimen dissolved in water yielded an odor resembling that of chlorin. On carefully exposing starch paper to the vapors from Atomidine, there was practically no coloration, but when potassium iodid paper was used, there was a deep coloration indicating chlorin (Cl^+—Cl^-) to be in the vapors. When starch was added to the diluted solution, the typical starch iodin color did not appear until a few drops of sodium thiosulphate or other reducing agent was added. As would be expected, iodin was not liberated when certain reducing agents were added to the alkaline solution, though the claim gives the impression that iodin is liberated in alkaline solution.

'Qualitative determinations yielded:

'Residue on evaporation[2]	2.07%
'Sodium (Na^+)	0.76%
'Chlorid (both as Cl^- and Cl^+)	2.09%
'C.c. of 0.02N $Na_2S_2O_3$ to combine with iodin liberated from potassium iodid by 1.0 c.c. Atomidine	16.60
'Titratable acidity (calculated as hydrochloric acid)[3]	1.35%
'Iodin (both as I^+ and I^-)	1.00%'

'Calculating from the foregoing, the average dose, as recommended for pyorrhea treatment, from 15 to 30 drops in one third of a glassful of cold water would be equivalent to approximately 0.01 to 0.02 gm. (approximately one sixth to one third grain) iodin (in combined form). Each daily dose (three doses) would be equivalent to 0.03 to 0.06 gm. (approximately one half to one grain) of iodin (in combined form). By way of comparison, the average dose of tincture of iodin, U. S. P., is 0.1 c.c., equivalent to approximately 0.11 gm. (1⅔ grains) iodin; and of compound solution of iodin, U. S. P. (Lugol's solution), is approximately 0.13 gm. (2 grains).

'It was found that a solution having the essential chemical properties of Atomidine may be prepared by adding hydrochloric acid, U. S. P., 3 c.c., to solution of chlorinated soda, U. S. P., 50 c.c., and to the acid solution adding a solution containing sodium iodid, U. S. P., 1.2 gm., dissolved in 10 c.c. of water; and the volume then diluted to 100 c.c.

'Such a reaction may yield a solution containing various products. This reaction mixture may contain, among other things, iodin-monochlorid (or iodin trichlorid) iodic acid and free chlorin. A solution with somewhat the same chemical characteristics might be prepared by a reverse reaction of sodium iodate and hydrochloric acid. The amount of sodium chlorid in Atomidine appears greater than could be accounted for by the latter reaction. In any event, whatever is present, the end reaction in the presence of reducing substances (as are present in the body) would be exactly the same, namely, iodids; that is, iodin in the combined form as exists in potassium iodid.

'Therefore, from both a therapeutic and a chemical standpoint, as far as internal medication is concerned, there appears to be no justification for asserting that Atomidine would act differently from iodids. As far as topical application is concerned, there is no adequate scientific evidence that Atomidine is superior or even the equal of tincture of iodin.'

"In our opinion, in view of the Chemist's report, it may be seen that Atomidine is an unnecessarily complex medium for iodin medication."

2. The residue was shown to be almost wholly sodium chlorid.

3. This figure does not mean that all acidity is due to hydrochloric acid, but for simplicity the results were calculated to that basis.

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SATURDAY, MAY 18, 1929

ACCIDENTS WITH LOCAL ANESTHETICS

The investigation of accidents following the use of local anesthetics instituted by the Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association has had many practical results. The reports of the American committees for the study of the toxic effects following the use of local anesthetics were published in 1920 and 1924.[1] Now André Klotz [2] of the Strasbourg Hospital has published the results of an extensive study of the literature on this subject.

Klotz states that while fatal accidents with local anesthetics are relatively rare in view of the frequency with which they are employed, he agrees with the conclusions of the American committees that accidents are due mainly to overdosage, to injections of cocaine, to the use of solutions of too high concentration, to excessive doses of epinephrine, and a smaller number to peculiar conditions of the patient which are beyond evaluation by the physician. He also agrees that the symptoms of fatal poisoning in man agree closely with those seen in animals in laboratory experiments, that convulsions commonly occur, and that death often results promptly from paralysis of respiration followed by stoppage of the heart.

Klotz states that some authorities recommend that, when symptoms of poisoning arise, the operation be completed as speedily as possible in order to prevent the further absorption of the anesthetic; but he believes that this is not to be recommended unless the operation can be completed with the utmost celerity. One should give, rather, immediate attention to the treatment of the symptoms. The situation demands clear thinking and prompt decision. Threatening symptoms demand prompt action; but if the danger of further absorption can be obviated with the loss of only a few seconds, it would seem to be worth while. A routine procedure cannot be recommended.

The investigations of the American committees and of Klotz have thrown much light on the causes of avoidable accidents with local anesthetics, but it is obvious that many surgeons continue to disregard the warnings that have been published merely because they themselves have not had serious mishaps. Reports continue to show that death results occasionally under conditions that show a disregard not only of the evidence obtained by the committees but of the ordinary rules of common sense when dealing with poisons. Klotz's recommendations for the prevention of accidents follow fairly closely those of the American committees. He states that when once symptoms of intoxication appear, measures should be adopted promptly for stimulating the respiration and the heart.

A certain proportion of fatalities seem to be unavoidable, regardless of the choice of anesthetic or of the method of administration. In this respect Klotz disagrees with the reports of the American committees, which did not find a single fatality undoubtedly due to the proper use of procaine. Local anesthesia has been induced by means of procaine hydrochloride in many thousands of consecutive cases without a serious accident. The difference in opinion is probably due to the fact that, while Klotz analyzed the reports in order to determine whether death was really due to the anesthetic, he was guided in his conclusions mainly by the views of those who reported the accidents, whereas the American committees undertook to formulate conclusions based mainly on the analysis of the evidence presented in each case regardless of whether this agreed with the opinion of the physician who reported the case or not. However, the conclusions of Emil Mayer and his committees were not commonly in conflict with those who submitted the reports. It would be unfortunate indeed if the idea became prevalent that a certain proportion of fatal accidents will occur in spite of all precautions, as this would unquestionably lead to some relaxation in caution.

In spite of the decreasing use of cocaine and its hydrochloride and the rapid increase in the use of procaine hydrochloride in this country, at least, cocaine was used alone or with other local anesthetics in 102 of the 151 fatal cases tabulated by Klotz. In one case a total of from 1.5 to 2 Gm. (30 to 40 cc. of 5 per cent solution) was administered by instillation.

It must be recognized that while local anesthesia can be conducted safely if the rules laid down are followed, nevertheless a certain proportion of the accidents result from peculiar pathologic states or abnormalities for which a satisfactory explanation is not offered. There are many reasons for believing that many of these deaths are due to abnormal conditions of the sympa-

1. Report of the Committee on the Advantages and Disadvantages of the Various Local Anesthetics in Nose and Throat Work, Tr. Sect. Laryng., Otol. & Rhin., A. M. A., 1920, p. 210; abstr. J. A. M. A. **75**: 315 (July 31) 1920. Mayer, Emil: The Toxic Effects Following the Use of Local Anesthetics: An Analysis of the Reports of Forty-Three Deaths Submitted to the Committee for the Study of Toxic Effects of Local Anesthetics of the American Medical Association, ibid. **82**: 876 (March 15) 1924.

2. Klotz, André: Les accidents mortels de l'anesthésie locale, Paris, Jouve & Cie, 1929.

thetic nervous system of which all too little is known but which under certain abnormal conditions reacts violently toward epinephrine and probably toward cocaine and many other drugs. The need for careful detailed statements of poisoning is not limited, however, to those of the local anesthetics. It is almost certain that morphine also has played an important part in many of the fatalities reported, a fact which was often so far overlooked that its administration was often not reported until further questioning brought out the fact that it had been injected, sometimes in large doses.

Klotz quotes the work of the American committees extensively and there is nothing in his report that leads to modification of the opinion based on the study of the Mayer reports. On the contrary, this monograph suggests renewed appreciation of the results accomplished by Emil Mayer and his associates in this country. Physicians should continue to cooperate with the Permanent Committee for the Study of Toxic Effects of Local Anesthetics. Reports of accidents from all parts of the world indicate that essentially similar conditions exist in all civilized countries, and that the only hope for greater control lies in study and analysis of every case.

GRAVES' CONSTITUTION (WARTHIN)

Ever since Dr. Henry S. Plummer suggested that "toxic adenoma" and exophthalmic goiter are two separate diseases, with essentially different clinical manifestations and histologic changes, and with different reactions to iodine therapy, students of the goiter problem have been engaged in controversy as to the relationship of these two conditions. Plummer's conception of "toxic adenoma" has been widely accepted among American clinicians, but many seem reluctant to believe that the two diseases are distinct. Since the address by Warthin in 1924 on "The Constitutional Entity of Exophthalmic Goiter and So-Called Toxic Adenoma," several references to "Graves' constitution (Warthin)" have appeared in medical literature; but only recently [1] has Warthin published his conception of the pathologic constitution underlying the development of the clinical manifestations of exophthalmic goiter and so-called toxic adenoma. Warthin points out that the general conception of hyperthyroidism, variously designated as toxic goiter, toxic adenoma and adenoma with hyperthyroidism, is a constantly enlarging clinical syndrome, to which symptom after symptom has been added until it has become practically impossible to distinguish clinically between what some writers regard as exophthalmic goiter and what others call by such names as toxic adenoma or toxic goiter. He considers that all individuals who may be grouped into either of these broad and variable syndromes present a clinical picture of a well defined type of distinct pathologic constitution. American writers have not grasped this fact, but in Germany and Italy various investigators are beginning to speak of the hyperthyroid constitution. Warthin prefers the term Graves' constitution in the absence of any convincing proof that thyroid hypersecretion is the underlying etiologic factor.

The person with Graves' constitution usually presents certain characteristic stigmas in varying degrees of intensity: slender skeleton; bright-eyed, alert facies; muscle tremors; moist, warm translucent skin, with tendency to excessive pigmentation, hyperhidrosis and dermatographia; full, rounded neck; enlarged cervical lymph nodes; thyroid enlargement in most cases; various eye changes, from the wide-eyed, vivacious individual to those with frank exophthalmos; tachycardia; rapid, full and frequently irregular pulse; vasomotor instability, with flushing, sweating and circumscribed edemas; central nervous system disturbances, manifested by excessive emotional responses, quickness of perception and reaction, unrest and haste, anxiety, insomnia, and flights of ideas, even to hysteria and psychosis; imbalance of the sympathetic nervous system; elevated basal metabolism; increased appetite for food, with no gain or actual loss of weight; lowered tolerance for carbohydrates with the development of hyperglycemia; various allergic reactions; psychic sexual excitability with physical inadequacy; impotence in the male and menstrual disturbances in the female; and diminished tolerance for thyroid preparations, iodine and epinephrine. The outstanding features are juvenile morphology and rapid functional reactions.

The clinical diagnosis of hyperthyroidism is thought by Warthin to be made frequently on the presence of one or two of the symptoms which may belong to Graves' constitution but which may not be associated with any disturbance of thyroid function. Many normal thyroid glands and simple goiters and adenomas are called hyperfunctioning or toxic on insufficient evidence; compound solution of iodine is given and operations are performed, and in the end histologic examination does not confirm the clinical diagnosis.

The pathologist encounters great difficulties if he attempts to apply the histologic criteria commonly used for the diagnosis of exophthalmic goiter, hyperthyroidism or toxic adenoma, namely, epithelial hypertrophy and hyperplasia, to all of the thyroid glands sent to him with such clinical diagnoses. The greatest difficulty comes in the cases which present the clinical symptoms of exophthalmic goiter, but in which epithelial hypertrophy is not found. The honest pathologist is further perplexed by the knowledge that epithelial hypertrophy may be found in the thyroid glands of persons who have never presented any clinical evidence of thyroid hyperfunction or dysfunction. As far as thyroid epithelium is concerned, there are

1. Warthin, A. S.: The Constitutional Entity of Exophthalmic Goiter and So-Called Toxic Adenoma, Ann. Int. Med. 2: 553 (Dec.) 1928.

no histologic criteria which give a pathologic unity to all of the clinical forms of thyroid hyperfunction.

Warthin considers that the most striking histologic feature of the thyroid gland of exophthalmic goiter or so-called toxic adenoma is the constant presence of hyperplastic lymph nodules with large germinal centers showing the characteristic lymphoid exhaustion of the thymicolymphatic constitution. Many Europeans have noted the constant presence of an enlarged thymus in cases of exophthalmic goiter, but Chvostek alone regards the general picture of exophthalmic goiter as indicating the "thymicolymphatic constitution." No one has yet observed the occurrence of the same pathologic constitution in cases of so-called toxic adenoma. Warthin's experience has been vastly different. He has restudied 976 surgically resected thyroid glands, the autopsy material of thirty postoperative deaths in exophthalmic goiter and of five deaths in acute exophthalmic goiter without operation, and the thyroid glands of 1,000 necropsies in which the thyroid gland was examined as a routine. Among the 976 surgical specimens, ninety-two were adenomatous colloid goiters with lymphoid hyperplasia but without epithelial hypertrophy. In all of these a clinical diagnosis of exophthalmic goiter, hyperthyroidism, toxic goiter or toxic adenoma had been made. The physical stigmas of Graves' (thymicolymphatic) constitution were present in the majority of these cases. Of the 1,000 necropsies studied, ninety-four cases showed lymphoid hyperplasia of the thyroid gland. In all of these, as well as in the thirty-five necropsy cases of exophthalmic goiter, there was found an associated pathologic picture of thymicolymphatic constitution: hyperplastic or persistent thymus, general enlargement of the lymph nodes and spleen, and hypoplasia of the suprarenals, aorta and heart, with other morphologic stigmas.

Warthin concludes that it is apparent from these studies that the constitutional defect of the thymicolymphatic (Graves') constitution underlies every case of exophthalmic goiter and so-called toxic adenoma. An adenoma of the thyroid gland, aside from its size and mechanical effects, is of clinical importance as far as so-called toxic symptoms are concerned only when it is associated with the thymicolymphatic constitution. It is Warthin's belief, therefore, that exophthalmic goiter and "toxic adenoma" possess the same pathologic constitutional entity. Not all cases of thymicolymphatic constitution will present clinical evidences of the exophthalmic goiter syndrome, but all cases of exophthalmic goiter and toxic adenoma will possess the essential morphologic stigmas of this constitution. This constitution is predetermined in birth and only those possessing the constitutional anomaly will develop so-called thyreotoxic symptoms. The potentiality may, however, remain latent or quiescent during the whole or a large part of the life of a person possessing this constitutional background.

THE PROBLEMS OF CHOLERA

Half a century has passed since Robert Koch, then working in Egypt, described the vibrio of cholera. The insusceptibility of the common laboratory animals to the disease has made it difficult to furnish as convincing direct experimental demonstrations of the etiologic potency of *Vibrio cholerae* as has been the case in some of the other infectious diseases. Nevertheless, in the course of time sufficient evidence has accumulated in other ways to leave no doubt today that Koch's vibrio is the specific infective agent in cholera. For prophylactic purposes Ferrau and Haffkine have inoculated more than half a million men with living cultures of the cholera vibrio without causing a single case. Hence the comment that "you can eat cholera, you can drink cholera, but you cannot catch it."

An effort to explain the existing confusion has been made by d'Herelle,[1] well known for his pioneer investigation of the bacteriophage, who has lately come to the United States to join the faculty of the Yale School of Medicine. He points out that the pathogenicity of the cholera vibrio has been studied too exclusively in the laboratory rather than at the bedside of patients within regions where epidemics of cholera are rampant. When the bacteriologist, as d'Herelle insists, has wished to study the characteristics of the cholera vibrio he has turned to old laboratory cultures, vibrios which have been maintained for years outside their natural environment. He may be able to add a new culture medium to the innumerable ones that have already been described, and this may indeed be useful although there is no organism more readily cultivable. And what shall we say, d'Herelle adds, of the results obtained by those who have undertaken to study the pathogenesis of cholera by animal inoculation, by attempting with old strains of the vibrio to infect guinea-pigs and rabbits, animals that are completely refractory?

According to d'Herelle and contrary to what many authors seem to think, the mere presence of vibrios in the intestine does not necessarily lead to any of the symptoms of cholera. The fact that these simple diarrheal conditions associated with the vibrios often disappear spontaneously without the individual exhibiting any of the symptoms of cholera is ample proof of this. For true cholera to develop, it is necessary that the vibrios invade and multiply in the intestinal mucosa in the region of the glands of Lieberkühn and in the interstitial glandular tissue. It is essential, then, that the vibrio be virulent; that is, capable of growing in vivo. In the last analysis virulence, according to d'Herelle, is the property of secreting enzymes capable of breaking down the protein of certain cells of the host. This permits the organisms to assimilate the products of cleavage and to multiply in situ. Following the Yale bacteriologist one might, indeed, speak of "virulent enzymes." When, as the result of disuse,

1. D'Herelle, Felix: Studies upon Asiatic Cholera, Yale J. Biol. & Med. 1: 195 (March) 1929.

the faculty of secreting these enzymes is diminished or lost, the virulence of the organism is attenuated or lost. But we can readily believe that a vibrio in which this property is diminished may be able to regain it in the intestine when the mucosa is irritated by any cause whatever. Finding in its environment the proteins liberated through some fortuitous destruction of the cells of the mucosa, the vibrio utilizes them, the production of virulent enzymes increases, and the organism thus becomes able to break down the proteins of living cells in situ.

The virulence of the cholera vibrio and its consequent pathogenicity depend on the relative potency of the bacteriophage that acts as its concomitant antagonist. According to d'Herelle, recovery from cholera does not take place through acquisition of a true immunity. Epidemics of cholera have shown that it is not an immunizing disease, for it has been noted that a single individual may contract cholera several times during the course of a single epidemic. The same is true of dysentery. D'Herelle points out that in cholera, especially, one may frequently see severe cases in which the symptoms disappear suddenly within a few hours after the onset of the disease. In other patients death may occur only after the disease has persisted for ten or twelve days. If the immunity is able to develop so quickly in cases of the first type, how is it that it is not yet established in cases of the latter type, even after twelve days? As a matter of fact, everything known concerning acquired immunity shows that it is not such an inconstant process. Indeed, everything indicates that immunity is established only after recovery; that it is a result and not the cause of recovery.

To one who champions such views, the introduction of bacteriophage obviously becomes the chief hope for combating cholera. The patients should be caused, early in the disease, to ingest a bacteriophage of high virulence. In this way it should be possible to avoid the failures in the natural adaptation of the intestinal bacteriophage, and to reproduce at will the natural processes of recovery. This method has been applied under d'Herelle's direction in some tens of thousands of cases of bacillary dysentery, and recovery always takes place within twenty-four hours. The outlook for cholera likewise is promising.

The epidemiology of cholera furnishes further perplexing problems. The carrier has often been drawn into the picture. According to d'Herelle the carrier of the vibrio is not infectious, and his experiments have further shown that all carriers of the vibrio are likewise carriers of the bacteriophage virulent for the pathogenic organism. Within the carrier of the vibrio the same phenomena take place as those occurring in the normal individual with reference to *B. coli*. There is within the intestine a perpetual secondary culture, that is to say, a bacteriophage-vibrio symbiosis, and the carrier of the vibrio, instead of being infectious, propagates the recovery.

Current Comment

TARIFF ON SURGICAL INSTRUMENTS

The tariff bill reported to the House of Representatives by its committee on ways and means, May 7, proposes to increase the ad valorem duty on surgical instruments from 45 per cent to 70 per cent, and on dental instruments from 35 per cent to 60 per cent. It names forceps, hypodermic needles and hypodermic syringes as surgical instruments. The specific duties urged by American makers of surgical instruments, to supplement the ad valorem duty, are not provided for in the bill. Prompt action by the House is likely. How far amendments will be tolerated in the course of the passage of the bill by the House is uncertain. Telegrams to Representatives, protesting against the proposed increase in the duty on surgical instruments, will be helpful, however, in paving the way for the adoption of an amendment to prevent that increase, if amendment is possible under the rules of parliamentary procedure adopted by the House to facilitate the passage of this bill.

THE VIRUS IN TYPHUS FEVER

According to an investigator [1] of typhus fever, in spite of the failure to cultivate *Rickettsia prowazeki* in artificial culture mediums and hence to fulfil Koch's criteria there is evidence of equally conclusive character that this micro-organism is the cause of the disease. The indications consist of the constant occurrence of *Rickettsia prowazeki* in lice containing the virus of typhus fever; the inseparability of the virus and the *Rickettsia* in any kind of material, whether from lice, experimental animals or man; the demonstrations of *Rickettsia prowazeki* in lesions; and, finally, their appearance in tissue cultures after long maintenance of the disease in guinea-pigs. There has been some debate, however, as to whether ordinarily the virus circulates free in the blood stream of patients or is associated with some of the formed elements of the circulating fluid. Some students [2] of the malady have expressed the belief that the virus is intimately connected with the blood platelets and that a high concentration of the virus can be realized in the platelet sediment by the centrifugation of citrated blood. Reimann, Lu and Yang [3] of the department of medicine at the Peking Union Medical College have taken occasion to reinvestigate the relationship between the virus and the platelets. There was no obvious relationship between the severity of the disease and the degree of thrombopenia in patients. It became evident from the reaction of experimental animals that both the platelet-rich plasma and the platelet-free serum induced typhus fever of similar severity. It seemed likely to the Peking clinicians that the virus exists free in the blood stream, although attempts to demonstrate *Rickettsia prowazeki* in their study by staining were not successful. They regard it as possible that a sim-

1. Wolbach, S. B.: Typhus Fever, in Cecil's Textbook of Medicine, Philadelphia, W. B. Saunders Company, 1927.
2. Ségal, J.: Brit. J. Exper. Path. **3**: 95 (April) 1922. Arkwright, J. A., and Bacot, A. W.: Ibid. **4**: 70 (April) 1923.
3. Reimann, H. A.; Lu, G. Y. C., and Yang, C. S.: The Blood Platelets in Typhus Fever, Arch. Path. **7**: 640 (April) 1929.

ilar specific gravity of the platelets and the virus may account for the concentration of the virus in the sediment of platelets after centrifugation, which several observers have reported. In any event they conclude that an association does not exist between the blood platelets and the virus of typhus fever, and that the latter exists free in the blood stream.

Association News

MEDICAL BROADCAST FOR THE WEEK

The American Medical Association Morning Health Talks and Evening Health Hints from Hygeia

The American Medical Association broadcasts daily at 10:45 o'clock in the morning, central daylight saving time, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of May 20 to May 25 will be as follows:

May 20. "Hay Fever and Its Geographic Distribution," by Dr. James Nall.
May 21. "How Are You? Very Well, Thank You," by Dr. R. G. Leland.
May 22. "Bargain Counter Babies," by Dr. R. G. Leland.
May 23. "Medical News," by Dr. J. F. Hammond.
May 24. "The High School Age," by Dr. R. G. Leland.
May 25. "Barnyard Golf," by Dr. R. G. Leland.

Health Hints from Hygeia, 8 o'Clock Central Daylight Saving Time

May 20. Food Poisoning by Rats.
May 21. Preventing Blindness in Children.
May 22. Animal Experimentation Adds to Span of Life.
May 23. How Insects Bite.
May 24. Code for Playing Safe.
May 25. Equipping Homes for Children.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Bills Enacted. — The following bills have become laws: Senate bill 182, regulating the sale, possession and use of habit-forming narcotic and other dangerous drugs; senate bill 213, providing that any surgeon of the United States Army or Navy, honorably discharged or temporarily detached from service, may practice medicine without examination in the state.

Revocation Set Aside.—The state board of medical examiners, February 6, reconsidered the case of Dr. George N. Stockwell, whose license had been revoked, July 11, 1928. A large group of representative citizens of Ventura, where Dr. Stockwell has practiced many years, had petitioned the board to set aside the revocation. After considering all the facts, the board restored Dr. Stockwell's license to practice but placed him on probation for five years, during which time he shall not have narcotics in his possession nor apply for a narcotic permit.

Personal.—Dr. Warren F. Fox, for many years health officer of Pasadena, has resigned, and Dr. Jay D. Dunshee has been appointed to that position.——Dr. Francis M. Stump, Crescent City, has been appointed health officer of Del Norte County to succeed Dr. Charles H. Barnes.——Dr. William P. Shepard has been elected chairman and Dr. Herbert F. True vice chairman of the health council of the San Francisco Community Chest. The establishment of a cardiac clinic at the Baby Hygiene Health Center was announced, and the names of the members of the cardiac committee of the health council were made public.——Dr. Thomas H. Ransom has been appointed health officer of the city of Burbank.

Bills Passed.—The following bills have been passed by the house and the senate: Senate bill 33, providing for the registration of all marriages, births and deaths, and for a central bureau for the preservation of such records; senate bill 556, providing for the arrest, without a warrant and on probable cause, of alleged insane persons; senate bill 618, making it unlawful to sell or furnish any barbital (diethylbarbituric acid) or veronal, except on the prescription of a physician; house bill 171, providing that whenever the state board of health deems a body required to be buried at public expense unsuitable for scientific purposes, the body may be either cremated or buried at public expense; house bill 739, creating a department of professional and vocational standards, to be headed by a director and to consist of the various boards of examiners, including the board of medical examiners; house bill 1033, providing that whenever more than fifty persons are confined in any jail, there shall be a licensed physician in attendance. The senate has passed senate bill 487, authorizing cities and counties to establish tuberculosis preventoriums.

Society News. — A symposium on bronchial asthma was presented by the eye and ear section of the Los Angeles County Medical Association, April 1, by Drs. Burton D. Haseltine, Alvin W. LaForge and Alonzo H. Waterman, all of Chicago, and Dr. Dean W. Myers, Ann Arbor, Mich.——At a meeting in the home of the San Francisco County Medical Society, April 22, the San Francisco Pathologic Society was formed to foster knowledge on the Pacific Coast. Dr. William Ophuls, dean and professor of pathology, Stanford University School of Medicine, was made president. A similar society was formed in San Francisco in 1851.——At the invitation of a section of the San Francisco County Medical Society, Dr. Joseph C. Beck, Chicago, will give a course in clinical pathology of the ear, nose and throat, July 1-3, in the morning from 8 to 10 and in the evening from 6 to 7. No fee will be charged. The medical society was addressed, May 14, by Dr. Zera E. Bolin on "Reticulo-Endothelial System in Disease," and Dr. Jacob C. Geiger on "Additional Facts Concerning Food Poisoning."—Dr. Wilfred H. Manwaring, professor of bacteriology and experimental pathology, Stanford University School of Medicine, addressed the Pasteur Society of Central California, San Francisco, May 1, on "Immunologic Prophesy from Ancient Hieroglyphics."——The Pacific Physiotherapy Association will conduct a physical therapy week in Los Angeles, June 17-20; the teaching staff will comprise Drs. Burton B. Grover, Colorado Springs; Joseph E. G. Waddington, Detroit; Edwin N. Kime, Indianapolis, and Argus David Willmoth, Louisville.

CONNECTICUT

Bill Passed.—The house and the senate have passed house bill 845, providing that any person duly licensed to practice any of the healing arts may make and file death certificates.

Society News. — The New Haven City Department of Health has moved its laboratory from 212 Orange Street to the Winchester Building, 87 Orange Street, to make way for the first unit of the new city hall, which will be started shortly. The whole sixth floor in the new location will be utilized by the laboratory.——Undulant fever has been a reportable disease in Connecticut since July, 1928.

Many Moving Pictures.—The following list of films shown at the nineteenth annual session of the Connecticut Conference of Social Work, Middletown, May 5-8, indicates that some groups are studying the value of moving pictures for teaching public health:

Sun Babies	New Ways for Old
Too Many Pounds	He Who Laughs Last
Sniffle's Snuffles	Healing of the Hills
Public Health Twins	A Fat Chance
How Life Begins	How to Prevent Disease
Garden of Childhood	Consequences

State Medical Meeting at Waterbury, May 22-23.—The one hundred and thirty-seventh annual meeting of the Connecticut State Medical Society will be held at the Castle Memorial Building, Waterbury, May 22-23, under the presidency of Dr. Earle T. Smith of Hartford. Clinics will be held, Wednesday morning, at the Waterbury and St. Mary hospitals. The guest speakers will be Drs. Lewis A. Conner, New York, on angina pectoris and coronary occlusion; John M. Wheeler, New York; Merrill C. Sosman, Boston, on cholecystography, and George E. Pfahler, Philadelphia, on irradiation of the thyroid. Many Connecticut physicians will take part in the program. The house of delegates and the council will meet in the forenoon of both days. The Women's Medical Society of Connecticut will meet, Wednesday, at the Hotel Elton, the guest speaker being Dr. Mary M. Crawford, New York. The annual dinner will be Thursday evening. The New Haven County Medical Society and the Waterbury Medical Society will entertain, Wednesday evening, following a buffet supper.

Study of Structure of the Brain.—Harry Payne Bingham has placed at the disposal of the anatomy department of Yale University School of Medicine the duplicate specimens in his collection of fishes deposited in the Peabody Museum. This series of vertebrates will permit a comparative anatomic study of the central nervous system which will have a bearing on the general knowledge of the brain and how it works. Mrs. Dudley S. Blossom, Cleveland, has subsidized a study of the structure of the brain by a grant of $5,000 a year for five years. This project sets well into the program of the Institute of Human Relations recently established at Yale, whose object is a better understanding of the factors involved in human behavior. In this connection, Dr. Harold L. Burr says, there has been a growing conviction in recent years that the functional activities of the basal ganglions are related closely to the development of personality, but the region of the basal ganglions in the human brain is "enormously complex and an analysis of the component parts is extremely difficult." One of three possible approaches to this problem is an evolutionary study of the basal ganglions based on a phylogenetic series. It is that method which these gifts will make possible.

DISTRICT OF COLUMBIA

University News.—President Coolidge signed a bill, March 4, appropriating $600,000 for improvements at Howard University, Washington; there was included $240,000 for a chemistry building, making, with the previous appropriation for this purpose, a total of $390,000; an item of $225,000 was included in the bill for increases in salaries and for additions to the teaching force. The U. S. Bureau of Education recently recommended employment of additional teachers at Howard University in order to relieve the teaching load brought about by the abnormally large classes.

Health Officer's Budget.—In presenting his budget for the fiscal year 1931, the district health officer, Dr. William C. Fowler, requests an increased appropriation for health work in the schools. It is understood that this work is being done today with the same number of employees that handled it twenty-six years ago, although the school population has almost doubled. The appropriation requested would enable the health department to employ forty-two additional workers. The total appropriation asked for the department was about $570,000. In the increase asked, provision would be made for more than $12,000 in salaries to provide for an assistant pound master, four sanitary inspectors and for the usual increases in salaries provided for under the personal classification act.

FLORIDA

Bill Introduced.—House bill 557 proposes to authorize the creation of county boards of health.

ILLINOIS

Personal.—Dr. Edward E. Moore, since 1913 health commissioner of Wilmette, has resigned.——Dr. Bernard J. Lachner has been elected a member of the board of directors of the Rock Island Savings Bank.——Dr. George D. Heath, Jr., has resigned as director of the health department of the city of Bloomington.——Dr. Howard M. Jamieson, Harding, Mass., has been appointed pathologist to the Decatur and Macon County Hospital, Decatur.——Dr. Albert N. Mueller has been appointed city physician of Rock Island for the fifth term.

Cooperation with Parent-Teacher Associations.—During the "summer round-up" of the parent-teacher associations, the state department of health will cooperate to bring about the physical examination of every child who will make his initial entry in school next fall. The public health nurses of the department have been instructed to render every possible cooperation with the parent-teacher associations in this work. The department of health will furnish moving pictures. The Illinois Congress of Parents and Teachers will furnish examination forms to its component units. There are said to be about 250,000 children who will enter school for the first time this fall.

Bills Introduced.—House bill 525 proposes to amend the Workmen's Compensation Act by providing, among other things, for stated rates of compensation for the total and permanent loss of the hearing of one ear or both and for the loss of one or both testicles. It provides, too, that when a physical examination is made by a surgeon engaged by an employee and there is no surgeon present on behalf of the employer, the employee's surgeon must furnish to the employer a copy of the report furnished to the employee and, further, that hospital records certified as true and correct by the officer in charge shall be admissible in compensation courts without any further proof, as evidence of the medical and surgical matters stated therein, but shall not be conclusive proof. House bill 722 proposes to repeal the act regulating barbers.

Physical Examination Costs University 29.3 Cents.—The health officer of the University of Illinois reported that a complete physical examination was given to 4,271 students of the university last year at a cost of 29.3 cents per man and 31.2 per woman. It was found that the health of 29 per cent of the students examined was such as to make advisable a follow-up examination; heart abnormalities were found in about 5 per cent of those examined; albumin in the urine in nearly 5 per cent, and sugar in the urine in about 1 per cent. The examinations disclosed that the teeth of 60 per cent of the women students were normal, while only about 41 per cent of the male students could claim that distinction. Cavities were three times as numerous in the teeth of male students, twice as many of their teeth were missing, and twice as many needed cleaning.

Chicago

Dr. Hektoen Honored.—Dr. Ludvig Hektoen, head of the department of pathology at the University of Chicago and director of the John McCormick Institute for Infectious Diseases, was decorated, May 14, with the order of St. Olaf, conferred by the king and legislature of Norway for "distinguished service in medical science." Consul General Olaf Bernts, Norway's representative in Chicago, presented the decoration at a banquet in the La Salle Hotel. The speakers included Dr. Morris Fishbein, editor of THE JOURNAL. Dr. Hektoen was born in Wisconsin, about sixty-six years ago, of Norwegian parents.

Matthews Lectureship Established.—Loyola University School of Medicine announces the establishment of the Samuel A. Matthews Lectureship by the Phi Beta Pi fraternity. Physicians are invited to attend the first Matthews lecture, which will be given by Dr. Arthur L. Tatum, professor of pharmacology, University of Wisconsin Medical School, Madison, on "A Physiologic Interpretation of Morphine Addiction," in the Mercy Hospital Amphitheater, 8 p. m., Monday, May 20. The late Dr. Matthews was professor and head of the department of physiology, pharmacology and therapeutics at Loyola, and previously was on the faculty of the University of Chicago and of Rush Medical College.

Society News.—The Chicago Council of Medical Women will be addressed, June 7, at the Medical and Dental Arts Club by Drs. Bertha M. Shafer on "Spinal Fluid Findings in the Diagnosis of Syphilis," and Eloise Parsons on "Diagnostic Value of Blood Chemistry."——The Chicago Ophthalmological Society will be addressed by Drs. George W. Hall and Roland P. Mackay at the Medical and Dental Arts Club, May 27, on ophthalmoplegic migraine and by Dr. George F. Suker, on idiopathic hypertension and its ophthalmic findings.——Among others Dr. Charles B. Huggins will address the Chicago Urological Society, May 24, at the Medical and Dental Arts Club on "Diverticulum of the Spermatic Ducts in the Region of the Prostate Obstructing Urination."——Dr. Logan Clendening, Kansas City, Mo., will address the Chicago Society of Internal Medicine, May 27, at the City Club on "The Plague Saints"; Dr. Joseph L. Miller, on "The History of Syphilis," and Barry J. Anson, Ph.D., on "Evolution of Anatomic Illustration."——The new Passavant Memorial Hospital, 303 East Superior Street, opposite Northwestern University Medical School, will hold its formal opening from 3 to 6 p. m., May 21.

MASSACHUSETTS

Dr. Stearns Appointed Commissioner of Correction.—Dr. Albert Warren Stearns has been appointed commissioner of correction by Governor Allen. Dr. Stearns has served at the Boston City Hospital, the Danvers Hospital and the Boston Psychopathic Hospital, and as a member of the Massachusetts Commission on Mental Diseases. He made a survey of prisons in Arkansas, and is a consultant to the naval hospital at Chelsea, and to the Judge Baker Foundation.

Dinner to Dr. Chadwick.—A testimonial dinner in honor of Dr. Henry D. Chadwick was given at the University Club, Boston, April 16, under the auspices of the state department of health and the Massachusetts Tuberculosis League, previous to his departure for Detroit to become director of the division of tuberculosis of the Detroit Department of Health. Among the speakers were the state health commissioner, Dr. George H. Bigelow, who presided, and Drs. Roger I. Lee and Alfred Worcester. Dr. Chadwick has been superintendent of the Westfield State Sanatorium for about twenty years.

Institute of Human Relations Enters Boston. — The Institute of Human Relations recently organized at Yale University, New Haven, Conn., has selected the Judge Baker Foundation of Boston as one of its research centers, and will start work there in September under the direction of Dr. William Healy and Augusta F. Bronner, Ph.D. A unit is being organized at Yale to come to Boston to study for five years, consisting of a psychiatrist, two psychologists and a social worker. To interest the public in this undertaking, a meeting will be held at the Boston Chamber of Commerce, May 21, to which more than 3,000 persons have been invited. President James R. Angell of Yale University has announced that this study will be of the family factors involved in child adjustment. It will be conducted simultaneously in New Haven and Boston. In both places families of children who have come in contact with the juvenile courts will be chosen. In collecting data faculty members and graduate students in the Yale law and medical schools and other departments will assist. Physiologic, psychologic, psychiatric and social examinations will be made, as well as those dealing with the economic and community factors. One purpose will be to assist the families. The cooperation of local agencies will be requested whenever there are problems of unemployment, sickness, legal entanglements or lack of recreational opportunities. No publicity is to be given its records concerning individuals. This will be the first investigation, the announcement says, in which experts in many fields have combined in an actual thorough-going study of a small group of families to discover the effect of environment on the development of the child. Dr. Healy is a pioneer in the study of youthful offenders in connection with the courts. He started the first juvenile court clinic in this country in Chicago in 1909 and was joined there by Dr. Bronner in 1913. Both were called to Boston in 1917, at which time Dr. Healy became the director of the Judge Baker Foundation.

MICHIGAN

Bill Passed.—The senate has passed senate bill 146, making insanity a ground for divorce.

Going Abroad to Investigate Undulant Fever.—I. Forest Huddleson of East Lansing has been directed by the U. S. Public Health Service to proceed to Tunis, Africa, Paris and Marseilles, London, Rome, the Island of Malta, Algiers and Morocco, and such other places in Europe and northern Africa as may be necessary in connection with field investigations of undulant fever.

"Doctor for Men" Fined.—Henry Van Hala was fined, April 27, for practicing medicine in Detroit without a license. Van Hala was one of several arrested following a raid on the offices of "Doctors for Men," 1039 Farmer Street (THE JOURNAL, July 21, 1928, p. 179). F. C. Fontaine pleaded guilty shortly after the arrest to practicing without a license and was placed on a year's probation.

Testimonial to Dr. Baker.—Dr. Charles H. Baker, Bay City, was guest of honor at a dinner given by the Detroit Oto-Laryngological Society at the Detroit Athletic Club, April 24, in recognition of his many years in practice. Dr. Baker was born in Michigan and graduated from the state medical school. During his long service, he has been prominent in medical organizations, having been the president of the state medical society in 1919 and 1920 and one of the organizers of the Saginaw Valley Medical Society. He is one of the four men in the state who are honorary members of the Detroit Medical Society. The toastmaster on this occasion was Dr. Burt R. Shurly.

Society News.—The Calhoun County Medical Society was addressed, May 7, by Drs. Harry E. Mock, Chicago, on "The Surgery of Trauma," and Luther A. Tarbell and Arthur C. Selmon, Battle Creek, on physical therapy technic. —— The Wayne County Medical Society and the American Proctologic Society met jointly, May 14; Dr. Edward W. Jew, Pittsburgh, presented a film on "Fistula in Ano," and Dr. Walter A. Bastedo, New York, spoke on constipation.——The Oakland County Medical Society, Pontiac, was addressed May 16, by Drs. Edward J. O'Brien and Richard H. Morgan, Detroit, on "Surgical Treatment of Pulmonary Tuberculosis" and "Pneumothorax," respectively, and by Dr. George A. Sherman, Pontiac, on "Diagnosis of Pulmonary Tuberculosis."——Dr. Charles McClelland has been elected president of the Detroit Oto-Laryngological Society for the ensuing year.

President Little Will Do Cancer Research in Maine.—President Clarence Cook Little, on leaving the University of Michigan, July 1, is to be director of the Roscoe D. Jackson Laboratory for Cancer Research on Mount Desert Island, a short distance from Bar Harbor, Maine. Dr. Little has been conducting cancer research for years. In 1927 a fund was donated to the university for five years to continue research under Dr. Little's direction. It was provided, however, that in case he left the university, the beneficiary of the fund might be changed. The laboratory now being erected in Maine is said to be a two and a half story building with nine rooms for investigators, eleven animal rooms, a histologic laboratory and a record office. The personnel which has been engaged in this work at Ann Arbor, and among whom there are no physicians, will be transferred to the new laboratory. The investigation is being conducted from a biologic point of view. The trustees and donors of the laboratory include Mr. and Mrs. Edsel Ford; Mrs. R. B. Jackson, wife of the late president of the Hudson Motor Car Company; Mr. and Mrs. Richard H. Webber and George B. Dorr. The fund to carry on this work amounts to $45,000 annually, and if progress warrants at the expiration of the five year term, the donors will provide additional support.

MINNESOTA

Society News.—A survey of crippled children in Hennepin County shows that there are 904 cripples under 21 years of age, or two cripples to each thousand of population. A report of the survey was made at the convention of the International Society for Crippled Children, in Minneapolis, March 18.—— The Walderly Academy, Middle River, purchased from the Seventh Day Adventist Society, has been remodeled at a cost of $55,000 for the care of tuberculous patients.

Hennepin County Society Has the Top Floor.—Members of the Hennepin County Medical Society, Minneapolis, are enthusiastically looking forward to occupying their new quarters, September 1, on the nineteenth floor of the new Medical Arts Building, which is exclusively devoted to the medical and dental professions. These quarters provide a larger auditorium, more room for the library and an attractive lounge furnished with elegant rugs and tapestries and having a large fireplace. The Medical Arts Building Company, as is its custom, has leased the top floor for a long term of years to the society at a nominal rental.

MISSOURI

Hospital News.—The Jewish Hospital, St. Louis, will erect a building near the main hospital building, to be known as the David Eiseman Hospital for Chronic Invalids and Convalescents, in memory of the father of Mrs. Marc C. Steinberg.

Dr. Pohlman Goes to Buffalo for Research.—A year's leave of absence has been granted to Dr. Augustus G. Pohlman, professor of anatomy, St. Louis University School of Medicine, to engage in research on diseases of the ear in Buffalo in a laboratory equipped with instruments of precision on sound physics, and with abundant material available. Dr. Pohlman has studied sound physics for years with the hope of finding a method of alleviating middle ear deafness. Before departing he was given a farewell dinner by the Naturalists' Club, of which he has long been a member.

Society News. — The Jackson County Medical Society, Kansas City, was addressed, May 7, by Drs. Hugh L. Dwyer on "Nephritis in Children," and Clinton K. Smith on "Ureteral Retention Catheter in Renal Infection."——Dr. Jabez N. Jackson, Kansas City, addressed the Joplin Medical Society, April 23, on "Differential Diagnosis of Chronic Appendicitis and Its Imitations."——The St. Louis Medical Society, May 7, held its second annual "hobby night." Drs. John Ellis Jennings spoke on "How to Become an Amateur Painter"; George Richter, "Relation of Photography to Art," and Rutherford B. H. Gradwohl, "Works of Art to Be Seen in London." The second annual art exhibit of the society will continue until May 21. Dr. Bransford Lewis recently won an exhibition chess game from Mr. J. A. Anderson, the champion of St. Louis. ——The Shelbina high and grade schools were recently closed for a few days on account of several cases of smallpox, pending the complete vaccination of the student body to prevent additional cases.

NEW HAMPSHIRE

Bill Enacted—Correction.—House bill 260, reported as repealing the compulsory vaccination law, should have been reported as amending the compulsory vaccination law. The former law provided that only physicians who are approved by the board of health may issue vaccination certificates. The bill just enacted permits any duly registered physician to issue vaccination certificates.

Bacteria in Cheese.—The state board of health made a study of many varieties of cheese on the market in connection with a joint committee on definitions and standards for foods. The results indicate that the number of bacteria per gram in the specimens of raw cheese examined at 37 C. varied from 26,000 to more than 19,000,000. A significant finding was that only one of thirteen different specimens of raw cheese examined was free from organisms of the colon group. The number of organisms of the colon group found in most of these samples varied from 4,200 to 54,000 in each 0.01 Gm. Processed cheese, a recent product of the cheese industry, is prepared by melting each and blending together various lots of cheese with the aid of heat and water, and sometimes of chemical emulsifying agents. This form of cheese has become popular. The state board of health says that more than half of the cheese distributed today is of the processed or blended variety. The samples of processed cheese examined showed a much smaller number of bacteria per gram as well as a smaller number of organisms of the colon group. The maximum number of bacteria found in any sample of processed cheese in this study was 800,000 per gram at 37 C. Among ten samples six did not show any organisms of the colon group. The study was extended still further to samples of cheese sold under the claim of being pasteurized. Examination of these specimens at 37 C. showed a variation in the number of bacteria found of from zero in one variety to 2,900,000 in other varieties. A striking feature of this part of the study was that only four among the twenty specimens showed any organisms of the colon group in 0.01 Gm. of cheese, and in these four they were in small numbers.

NEW JERSEY

Hospital News.—Part of the main building of the New Jersey State Hospital at Greystone Park was destroyed by fire, May 6. The patients were removed with safety. The property loss was estimated at about $1,000,000.

Bills Passed.—The house and the senate have passed house bill 257, amending the law regulating the practice of midwifery by providing that the board may suspend licenses. The senate has passed senate bill 296, regulating the sale, possession and distribution of narcotic drugs.

Parasites to Attack Beetles.—The New Jersey State Department of Agriculture has established throughout the state colonies of beetle parasites to prey on and destroy the beetles. The state helps to maintain a Japanese beetle laboratory at Morristown for the purpose of developing methods of plant protection. It was from here that the parasites have been liberated. In five years, thirteen species and more than 1,000,000 individual parasites have been liberated. Five of them have already established themselves and are functioning. They are brought here from Japan and other oriental countries.

NEW YORK

New York City

Columbia Given Dormitory for Medical Students.—Mr. Edward S. Harkness has given $2,000,000 to Columbia University for a residence hall for 400 medical students and bachelor junior hospital officers, which will be erected north of the group of structures in the new medical center facing Riverside Drive.

Academy Condemns Testimonials.—The flourish in the newspapers and other periodicals of medical testimonials in connection with advertisements of commodities was the subject of a resolution by the New York Academy of Medicine, May 4. The practice was considered contrary to the traditions and best interests of the medical profession, and reprehensible because it allows the public to be imposed on. The academy pointed out that some of these advertisements take advantage of the ignorance of the public of the value of the testimonial by using the names of foreign physicians. It was urged that no fellow of the academy grant such testimonials under any circumstances. Such advice is as much in the interest of the public as of the profession (THE JOURNAL, June 13, 1925, p. 1830; July 4, 1925, p. 39).

Gifts for Research.—New York University and Bellevue Hospital Medical College announce gifts amounting to $122,000 for medical research this year to continue and extend work being done on pneumonia, rheumatism, heart disease, infantile paralysis and asthma. The Harriman Research Fund, which recently allied with the university, has a laboratory, the trustees of which are Drs. William H. Park, William J. Maloney and William G. Lyle. This laboratory is devoting its entire time to perfecting a serum for the prevention of pneumonia. Other gifts announced include $25,000 from the Lucius N. Littauer Fund for research on the cause and cure of pneumonia; $50,000 from an anonymous donor for the study of rheumatism, heart disease and pneumonia; $10,000 annually from Richard T. Crane, Jr., Chicago, for the study of hay-fever and asthma; $13,000 annually for three years from the Milbank Foundation, and $6,000 from the Commonwealth Fund.

Hospital on a Hotel Basis.—According to the New York *Times*, nearly 1,000 persons attended the laying of the cornerstone of the "Doctors' Hospital," April 30, which is under construction on East End Avenue between Eighty-Seventh and Eighty-Eighth streets. John W. Davis, formerly ambassador to Great Britain, laid the stone. Dr. Alexander Lambert, president of the medical board of the hospital, stated that the Doctors' Hospital is not intended for medical research but will contain every device for diagnostic purposes and all essentials for the care of the sick. Heretofore hospitals with few exceptions have paid more attention, he said, to the medical and surgical care of the patients than to their comfort during convalescence. The physicians composing the board of the new hospital felt that the demand was urgent for an institution that would definitely aim to make patients as comfortable as it is possible to be when outside of their home. Since it seemed evident to them that modern hotels are developed to furnish the best physical care for people outside of the home, it was planned to run the new hospital on a hotel basis. The institution will cost about $4,250,000. Effort is being made now to complete the financing by raising the last $500,000. There are 500 holders of certificates of ownership.

OHIO

Bill Enacted.—Senate bill 243 has become a law, amending the Workmen's Compensation Act by including among the list of occupational diseases manganese dioxide poisoning, radium poisoning, and tenosynovitis and prepataellar bursitis.

Art Exhibit Planned.—The Cleveland Academy of Medicine is planning to hold an art exhibit this year and has appointed Dr. Louis J. Karnosh chairman of the committee. The exhibit will include paintings, etchings, sculpture, wood carving, metal craft, drawings, jewelry and photographs—the work of Cleveland physicians interested in art as a hobby.

Health Month Instead of Health Day.—The mayor of Toledo has proclaimed May as health month. The Academy of Medicine of Toledo will sponsor a series of public lectures; Drs. Louis A. Levison will speak, May 20, on "Conditions Affecting Health and Longevity"; Chester W. Waggoner, May 21, on "Why Free Medical Service"; John T. Murphy, May 22, "The Reason for Medical Conservatism," and Stanley D. Giffen, May 23, "Let's Save the Children." The mayor's committee has instructed the speakers' bureau of the academy to furnish in addition lectures on health topics for the various civic organizations and luncheon clubs.

Society News.—The Cincinnati Academy of Medicine gave a symposium, April 8, on effects of abnormal atmospheric pressure. Drs. Emil R. Swepston spoke on compressed air workers' disease, and Herbert B. Wright, Cleveland, on aviators' disease and mountain sickness. The academy was addressed, April 29, by Dr. Robert L. Dickinson, New York, on "Medical Aspects of Human Fertility."——Dr. Dean Lewis, professor of surgery, Johns Hopkins University, Baltimore, addressed the Montgomery County Medical Society, Dayton, April 5, on "Surgical Lesions of the Spleen."——Dr. Louis J. Hirschman, Detroit, addressed the Toledo Academy of Medicine, April 5, on "Pitfalls in Diagnosis of Colitis."——Dr. Clyde L. Cummer, Cleveland, councilor of the Fifth District, addressed the Lake County Medical Society, Painesville, recently, on "Differential Diagnosis of Syphilis, Malignancy and Tuberculosis of the Lip and Tongue."——The Ashland County Medical Society was addressed, March 1, by Dr. Andre Crotti, Columbus, on goiter. ——The Portage County Medical Society, Kent, was addressed, April 11, by Dr. Bernard H. Nichols, Cleveland, on "Pathology of the Upper Abdominal Quadrant."——The Toledo Academy of Medicine was addressed, May 3, by Dr. Arthur Steindler, professor and head of the department of orthopedic surgery, State University of Iowa College of Medicine, Iowa City, on "Biophysics in Locomotion."

OKLAHOMA

Society News. — The Garfield County Medical Society, Enid, held a guest day program and complimentary dinner, April 15. Dr. Alfred W. Adson, Rochester, Minn., discussed "Treatment of Raynaud's Disease and Allied Vascular Disturbances by Thoracic and Lumbar Sympathetic Ganglionectomy"; Dr. Adson also conducted a clinic, as did Dr. David P. Barr of St. Louis, who spoke on significance of high blood pressure. Dr. Wade H. Sisler, Tulsa, conducted an orthopedic clinic and spoke on "Reconstruction Operation in Hip Fractures"; Drs. Charles C. Dennie, Kansas City, Mo., spoke on "Hereditary Syphilis" and Samuel J. Burrows, Chicago, "Practical Points in General Surgery."

OREGON

Registration Fees to Support Library. — In accordance with the law enacted during the present session of the legislature, the library of the University of Oregon Medical School will receive 40 per cent of the funds paid to the state board of medical examiners by physicians as annual registration fees. This money is to be used to maintain and build up the circulating medical library for the use of practitioners in the state.

Changes in Medical Faculty.—The board of regents of the University of Oregon Medical School has authorized the following changes in the faculty: Drs. Frank R. Menne to be head of the department of pathology; Edwin E. Osgood to be associate professor of medicine, and Wesley E. Gatewood to be assistant clinical professor of medicine. The resignation of Dr. Robert L. Benson as professor and head of the department of pathology was accepted.

Society News.—The annual Thomas M. Joyce lecture in surgery of the Portland Academy of Medicine was delivered by Dr. Howard C. Naffziger of San Francisco, April 25, on "Observations on the Diagnosis and Localization of Intracranial Tumors."——Twelve tuberculosis clinics will be given before medical societies throughout the state in an early diagnosis campaign which is being carried on by the Oregon Tuberculosis Association in cooperation with the Oregon State Medical Society and the University of Oregon Medical School. A considerable number of local physicians will give their services in this campaign.——Dr. Charles C. Tiffin, Seattle, addressed the Lane County Medical Society, Eugene, April 18, on local anesthesia in thyroid surgery. —— The Portland Academy of Medicine was addressed, recently, by Dr. Jacob P. Greenhill, Chicago, on treatment of placenta praevia.

PENNSYLVANIA

Bill Enacted.—House bill 1902 has become a law, establishing a state narcotic farm for the confinement and treatment of persons addicted to the use of habit-forming narcotic drugs.

Society News.—The Cambria County Medical Society was addressed, May 9, by Dr. Roy Wesley Scott, Western Reserve University School of Medicine, Cleveland, on "Clinical and Pathologic Observations in Coronary Artery Disease." Dr. Theodore B. Appel, state health officer, also addressed the society.—Dr. Albert H. Super, Allentown, has been appointed superintendent at Pennhurst State School.——Dr. Edward Pardoe has been elected a director of the First National Bank of South Fork.

Philadelphia

Personal.—Dr. Charles J. Prohaska, for eight years on the faculty of Temple University, has resigned to become director of health and physical education of the state of Connecticut to succeed Dr. A. G. Ireland, who has accepted a similar position in New Jersey. —— Drs. James A. and William Irwin will travel in Europe this summer, returning in September.

Society News.—The Medical Club of Philadelphia made a sight-seeing train trip to Washington, D. C., for its sixth annual outing, May 16. The club called on the President, then went to Mount Vernon and Fort Myer, and on returning to Washington had dinner at the Union Station.——The Philadelphia County Medical Society will conduct a pediatric night, May 22; Drs. Percival Nicholson, Ardmore, Pa., will discuss natural and artificial heliotherapy; Emily P. Bacon, "The Maltreated Cause of Malnutrition," and Aaron Capper, "Facts and Fads in Infant Feeding."——The Philadelphia Pediatric Society was addressed, May 14, by Drs. Grover F. Powers, professor of pediatrics, Yale University School of Medicine, on "Rôle of Transfusion in Pediatric Practice," and Daniel C. Darrow, assistant professor of pediatrics at Yale, on "Pathogenesis of Edema Associated with Low Concentration of Plasma Proteins."——Dr. Haven Emerson, New York, addressed a meeting sponsored by the Philadelphia Child Health Week Committee at the Bellevue-Stratford Hotel, May 7, which was attended by representatives of about 150 health agencies. Dr. Emerson presented results of the hospital and health survey of Philadelphia which he has been directing for several months at the instance of the chamber of commerce and other agencies.

WASHINGTON

Fifty-Seven New Seattle Members.—At the annual banquet of the King County Medical Society, Seattle, April 20, representatives of nearly every county society in the state were among the guests. An oil painting of the late Dr. Lewis Dawson was presented and a large painting illustrating the proposed new King County Hospital hung over the speakers' table. The names of fifty-seven new members of the society were read. The address of the evening was presented by Prof. Clark P. Bissett, professor of law at the state university, on "The Physician." The toastmaster was Dr. Homer D. Dudley. The society was addressed, May 6, by Drs. George E. Price on cerebrospinal arteriosclerosis, and Christian J. Rohwer on neuroanatomic diagnosis.——The Seattle Academy of Medicine was addressed, April 19, by Dr. Paul G. Flothow on "The Relief of Pain."

WISCONSIN

Bill Introduced.—Senate bill 451 proposes to provide for the sexual sterilization of feebleminded and insane persons before their release or parole from any state or county institution.

Society News.—Dr. Walther Straub, professor of pharmacology, University of Munich, addressed the University of Wisconsin Medical Society, Madison, May 8, on digitalis; Dr. Straub recently gave the Lane Lectures at the University of California Medical School, San Francisco.——Mr. William J. Burns, executive secretary of the Toledo Academy of Medicine, Toledo, Ohio, addressed the Milwaukee County Medical Society, Milwaukee, May 10, on "Functions of the Executive Secretary."

GENERAL

Towns Without Physicians. — The newspapers recently reported two towns without physicians. Arpin, Wis., was endeavoring to induce a physician to locate there by guaranteeing at least $1,000 a year. Oakley, Idaho, which has been without a physician, it was said, for several years has engaged a physician under a contract which specifies that should his income fall below a specified sum in any month, the difference will be made up by assessments on the citizens. Families in Oakley were assessed $20.

Expenditure for High School Education Increases Tenfold.—The appropriations for public high school education increased tenfold between the school years 1913 and 1925, according to a report of a committee on economic changes of the President's Unemployment Conference, of which President Hoover is said to be chairman. Expenditures for education in this country in the school year 1925-1926 were about $2,744,000,000, and about $2,500,000,000 of this amount represents free education. In that school year, the committee reports, universities and professional schools expended $407,400,000, of which students returned to the schools in the form of tuition fees $101,499,000. College and university students are said to have increased in number from 325,219 to 822,895 between the school years beginning in 1913 and 1926. The per capita expenditure for pupils in the public elementary schools in 1926 was $63.31; in the public high schools, $195.74, and in the universities and colleges, $423.

Society News.—At the annual meeting of the American Association of Pathologists and Bacteriologists in Chicago, March 28-29, Dr. George H. Whipple, dean and professor of pathology of the University of Rochester School of Medicine and Dentistry, Rochester, N. Y., was elected president; Major George R. Callender, U. S. Army Medical School, president elect, and Dr. Howard T. Karsner, professor of pathology Western Reserve University School of Medicine, Cleveland, secretary. The next annual meeting will be in New York, April 17-18, 1930.——The American Child Health Association will conduct an invitational working conference at Hotel Cedar Shore, Sayville, Long Island, June 17-20.——At the annual meeting of the American Surgical Association, Cleveland, May 4, Dr. Fred B. Lund, Boston, was made president; Drs. Carl A. Hamann and Astley P. C. Ashhurst, Philadelphia, vice presidents, and Dr. Lincoln Davis, Boston, secretary, reelected. The next annual session will be held at Philadelphia.

Trachoma Prevention Work.—Hospitals for the treatment of trachoma have been maintained by the U. S. Public Health Service at strategic points in affected areas for years. At

present these trachoma hospitals are in Kentucky, Tennessee and Missouri, which states cooperate in conducting the hospitals. Missouri and Arkansas probably have as much trachoma now as Kentucky had when the preventive work began. There is evidence, the public health service says, that trachoma exists to a dangerous extent in other states. Resurveys have been made which show that trachoma is about to be eradicated in some areas. Certain counties have become almost free from trachoma, but in others the spread of the disease seems not to have ceased. Missouri has a "blind pension law" and in one year 3,152 pensions were operative, costing the state $200,000. Of these pensioners 20.2 per cent were blind because of trachoma. Trachoma is difficult to cure completely. It can be arrested if treated properly in the early stages; the complications that harm vision can be prevented and the victim restored to economic usefulness.

Contributions by Corporations to Hospitals May Be Deductible.—The Board of Tax Appeals held in the case of Sugarland Industries v. Commissioner, April 5, that corporations may under certain circumstances deduct from their income tax returns contributions to hospitals. The law does not permit a corporation generally to deduct contributions unless they bear a direct relation to the business of the corporation. In this case, the Sugarland Industries employed several hundred persons who lived in Sugarland, Texas. Prior to 1920, Houston, 23 miles away, was the nearest place where employees of the corporation could obtain hospital care. In 1920 the corporation formed an association to provide hospital facilities for Sugarland and contributed $100,000 to the association. The Board of Tax Appeals, in upholding the deductibility of this contribution, said that in making it the corporation did not act in the rôle of a philanthropist but did so as a business proposition, for as a result of the contribution the *esprit de corps* of the employees was reflected in their work. If the interests of the employees are safeguarded, the court said, both the employer and the employee benefit. The contribution was held to bear a direct relation to the business of the corporation.

Reduction of Professors' Pensions.—Andrew Carnegie in 1905 provided a $10,000,000 fund for pensions for college and university professors, and it has been increased from time to time to $30,857,000. To meet the demands during the next thirty-five years this total will have to be $50,000,000. Henry S. Pritchett, Ph.D., president of the Carnegie Foundation for the Advancement of Teaching, says that at the end of that period the load of retired allowances will have sunk to the level of the annual income of the endowment. The rules of the foundation, Dr. Pritchett said, make it clear that the benefits accruing are not contractural and that the obligations of the foundation do not go beyond the resources now guaranteed to it. The rules of the foundation are framed on competent actuarial studies and the trustees have endeavored to place the retired allowances on as generous a scale as possible. The cuts in pensions recently announced, amounting in all to more than $16,000,000, will be borne by 2,800 persons, but about 1,100 teachers and widows will continue to receive the same amounts as heretofore. Two causes operating in the last eight years, Dr. Pritchett is reported to have said, made an adjustment necessary. First was the addition of many names not reported to the foundation by the associated colleges in 1922. Second was the rise in the salary scale which could not be foreseen. If the rules of the foundation had not been changed now, the fund would have been exhausted in about twelve years. The new sloping scale based on salaries in the last ten years and a conservative mortality table is the result of much study by officials of the foundation.

Medical Bills in Congress.—H. R. 2667, introduced by Representative Hawley, Oregon, proposes to increase the tariff on surgical instruments from 40 per cent to 70 per cent. S. Res. 51, introduced by Senator Copeland, New York, proposes that the Secretary of the Navy be requested to detail a medical officer of the navy to the Senate. H. R. 2375, introduced by Representative Crail, California, proposes to amend the World War Veterans' Act so as to provide hospitalization for women citizens of the United States who served with the armed forces of the United States overseas during the World War, as agents of the American Secret Service, as employees of the Department of State or the Department of the Treasury, or as welfare workers in welfare organizations authorized by the United States government to function overseas with the allied forces. H. R. 2376, introduced by Representative Crail, California, proposes to amend the World War Veterans' Act so as to bring within its purview those who served overseas as secretaries, dietitians or bacteriologists in the Army Medical Corps, or as employees in the Army Ordnance Corps, Army Signal Corps, Army Quartermaster Corps, Army Educational Corps or Army Air Corps. H. R. 2377, introduced by Representative Crail, California, proposes the erection of a sanitary fireproof dormitory and infirmary for disabled women veterans only. H. R. 2379, introduced by Representative Crail, California, proposes to amend the World War Veterans' Act so as to provide, among other things, that the director of the Veterans' Bureau shall furnish to every honorably discharged veteran of the Spanish-American War, the Philippine insurrection, and the Boxer rebellion such medicines, serums and surgical supplies as disease and disabilities of the veterans require. H. R. 2380, introduced by Representative Crail, California, proposes the erection of a Veterans' Bureau hospital in the state of California. H. R. 2390, introduced by Representative Fisher, Tennessee, proposes to authorize an appropriation of $1,000,000 to be expended by the director of the Veterans' Bureau in building additions to Hospital 88, at Memphis, Tenn. H. R. 2685, introduced by Representative Oldfield, Arkansas, proposes to amend the World War Veterans' Act so as to provide that an ex-service man who is shown to have, or, if deceased, to have had, prior to Jan. 1, 1927, neuropsychiatric disease, an active tuberculous disease, paralysis agitans, epidemic encephalitis, amebic dysentery, a chronic disease of the heart or circulatory system, diabetes or nephritis, developing a 10 per cent degree of disability, shall be presumed to have acquired the disability in service between April 6, 1917, and July 2, 1921, or to have suffered aggravation of such disease. H. R. 2686, introduced by Representative Oldfield, Arkansas, proposes to amend the World War Veterans' Act so as to provide that a veteran entitled to hospitalization and medical treatment may, at his option, obtain such treatment from private sources, the expense of such treatment to be borne by the United States Veterans' Bureau.

CANADA

Dr. Cruickshank Comes to Dalhousie University.—Dr. Ernest W. H. Cruickshank arrived at Halifax from India in December to become director of the department of physiology at Dalhousie University. Dr. Cruickshank held a similar post at Peking Union Medical College, Peking, from 1920 to 1924, and then spent eighteen months at Cambridge University, following which he was appointed director of the department of physiology and biochemistry at the Prince of Wales Medical College in Batna, India.—Dalhousie University Medical School was recently presented with portraits of the late Dr. Alexander G. Hattie, its first lecturer in obstetrics, and of Dr. Archibald Lawson, former professor of medicine. In each case the portrait was painted by a son of the subject.

Vancouver's Summer School.—The Vancouver Medical Association will hold its ninth annual summer school in that city, June 25-28. Dr. Charles H. Best, professor of physiology, University of Toronto Faculty of Medicine, will lecture on the action of insulin and recent work on the vitamins and other subjects; Dr. Thomas Addis, professor of medicine, Stanford University School of Medicine, San Francisco, on chronic interstitial nephritis, toxemia of pregnancy and hypertension; Dr. William E. Gallie, Toronto, hernia, fractures, dislocations and abdominal emergencies in childhood; Dr. Norman B. Gwyn, Toronto, blood diseases, rheumatic fever, coronary thrombosis and postoperative pulmonary complications; Dr. Oswald S. Lowsley, New York, tumors of the bladder, urinary calculi, tuberculosis of the kidney and surgery of the prostate, and Dr. Ernest Sachs, professor of clinical neurologic surgery, Washington University School of Medicine, St. Louis, on brain tumors, neuralgia and skull fractures.

Reorganization of Montreal Health Department.—Several months ago the health department of the city of Montreal began a reorganization which has resulted in fifty new employees being added, together with new equipment, which requires an additional appropriation of $150,000 a year. There has been provided a corps of school medical inspectors and school nurses, additional inspectors for the examination of sanitary equipment in buildings, two supervisors of inspectors of food and restaurants, and three veterinarians to assist the meat and milk inspection staffs. Dr. Seraphin Boucher remains the health officer; the *Canadian Medical Association Journal* says that an assistant health officer is to be appointed. The Montreal Anti-Tuberculosis and General Health League recently conducted a health survey of the city and a program for improving the public health has been mapped out. With the interest of the public in health now apparent, the possibility of a repetition of the epidemic of typhoid that occurred about two years ago is remote.

Government Services

Changes in Veterans' Bureau Personnel

The April *Bulletin* of the U. S. Veterans' Bureau notes the following changes in personnel:

HOSPITALS

Dr. Edward K. Allis, transferred to Chillicothe, Ohio.
Dr. Claude L. Armstrong, transferred to Portland, Ore.
Dr. Frank L. Biscoe, transferred to Edward Hines, Jr., Hospital, Maywood, Ill.
Dr. Harry H. Botts, transferred to American Lake, Wash.
Dr. Mordecai R. Bren, transferred to Palo Alto, Calif.
Dr. Leland O. Carey, transferred to Portland, Ore.
Dr. Fred H. Clark, transferred to central office.
Dr. Charles W. Grady, appointed at Palo Alto, Calif.
Dr. Scott Johnson, resigned at Bronx, N. Y.
Dr. John J. Lancer, transferred to regional office, Cincinnati.
Dr. Wooten D. Lightfoot, transferred to Livermore, Calif.
Dr. Everett Morris, resigned at San Fernando, Calif.
Dr. Theodore O. Morris, transferred to Aspinwall, Pa.
Dr. Clyde H. Pember, transferred to regional office, Fargo, N. D.
Dr. Herbert B. Perry, resigned at Northampton, Mass.
Dr. John N. Perkins, transferred to Portland, Ore.
Dr. George E. Riggs, transferred to Boise, Idaho.
Dr. William J. Roberts, transferred to Fort Bayard, New Mexico.
Dr. Milton K. Thompson, appointed at Muskogee, Okla.
Dr. Welcome B. Tilton, transferred to Muskogee, Okla.
Dr. Alvah W. White, transferred to Philadelphia.
Dr. Clarence E. Whitney, transferred to American Lake, Wash.
Dr. Joseph E. Wier, resigned at Oteen, N. C.

REGIONAL OFFICES

Dr. James T. Calloway, resigned at Atlanta, Ga.
Dr. Gustaf W. Dahlquist, appointed at Fargo, N. D.
Dr. Edmund L. Harrison, transferred to central office.
Dr. William F. Lake, appointed at Atlanta, Ga.
Dr. Benjamin J. Lewis, transferred to Columbia, S. C.
Dr. Floyd B. Ricketts, reinstated at Helena, Mont.
Dr. Buell S. Rogers, resigned at Chicago.
Dr. Carl W. Woods, transferred to New York.

Army Personals

Lieut. Col. Frank W. Weed is relieved from duty as student at the Army War College on completion of the present course and is detailed with the three hundred and forty-first medical regiment, organized reserves, Boston.——Major James F. Johnston is relieved from duty at the Army War College and detailed for duty at the University of Pittsburgh.——Major William O. Wetmore is relieved from duty in the surgeon general's office on completion of his course of instruction at the Army Industrial College and detailed for duty at George Washington University Medical School, Washington.——Major Robert W. Kerr is relieved from duty at Walter Reed General Hospital, effective about August 11, and detailed to New York.——Capt. William E. McCormack is relieved from duty at Oklahoma City and assigned to Fort Sam Houston, Texas, for duty.——Capt. Otto Christian is relieved from duty at Fort Sam Houston, Texas, effective about April 15, and will proceed to Fort Strong, Massachusetts.——At his examination for promotion to the grade of major, Capt. George Newlove was found physically disqualified in line of duty and his retirement from active service as a major, effective April 6, has been announced.——Capt. Frederick T. Rice, at his examination for promotion, was found physically disqualified in line of duty and his retirement from active service as a major, effective April 6, has been announced.——Major Caspar R. Byars is relieved from duty as transport surgeon, headquarters Army Transport Service, Brooklyn, and will proceed to the general dispensary, Baltimore, for duty.——Capt. William S. Prout is relieved from duty at Fitzsimons General Hospital, Denver, and assigned to duty at West Point, N. Y.——The resignation of Capt. Hobart D. Belknap has been accepted by the President.——Major Alexander M. Brailsford, relieved from Fort Worden, Washington, and assigned to duty in Alaska, proceeded to his new station in March.——Capt. Frederick A. Blesse, Carlisle Barracks, Pa., was ordered to the army and navy general hospital, Hot Springs National Park, Ark., for observation and treatment.

Colonel Gilchrist Chief of Chemical Warfare Service

President Hoover, March 27, appointed Col. Harry L. Gilchrist, U. S. Army Medical Corps, chief of the chemical warfare service to succeed Major General Amos E. Fries. Colonel Gilchrist is well known for a study of the effects of gas warfare, and a book has recently been published giving abstracts of his lectures at the Army Medical School and the School of Gas Warfare. The review of this volume appeared in THE JOURNAL, May 4, p. 1545. He is a native of Iowa, a graduate of Western Reserve University School of Medicine, Cleveland, and entered the army as a contract surgeon in 1898.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 27, 1929.

Asthma Research

The formation of the Asthma Research Council for the investigation of asthma, hay-fever, eczema, migraine and allied diseases has been described in previous letters to THE JOURNAL. Progress is now reported. At Guy's Hospital, a team, including a clinician, biochemist, bacteriologist, immunologist, rhinologist, psychologist and radiologist, is already at work. Here a number of patients are being subjected to an exhaustive investigation, which has already disclosed a constant deficiency of certain elements in the blood, the correction of which it is hoped may relieve or even permanently cure the condition. Equally promising is the work at the newly formed clinic at Great Ormond Street Hospital for Sick Children, where asthma is being attacked in its simplest and most curable stage. The association of asthma with cyclic vomiting, epilepsy, migraine and skin disease is being investigated at this center. At the London Clinic, Ranelagh Road, S.W., physical methods of treatment, including medicated inhalations, ultraviolet irradiation, diathermy and breathing exercises, are being investigated by a physician, who has visited the principal asthma spas on the continent. It is proposed to give a grant to St. Mary's Hospital, where active research on asthma has been carried out for eighteen years. It is also proposed to appoint a research worker at King's College, London University, to study the experimental production of asthma and the effects of drugs which relieve the paroxysm. At Brompton Hospital arrangements are being made to investigate the relation of asthma to general respiratory diseases. A grant is also required by the London Hospital for examining the effects of roentgen therapy, of which encouraging reports have been made.

So keen is the national desire to forward this work that a number of institutions in the province have agreed to provide research facilities as soon as the necessary funds permit. A feature of the campaign is the appeal which is being made to asthmatic sufferers to cooperate. All sufferers and the parents of all children suffering from asthma in Great Britain and the overseas dominions are being invited to assist the campaign not only by subscribing but by filling out family history forms which, it is hoped, will give valuable information as to the influence of heredity in asthma and its allied disorders. A report of progress will be published annually and will be supplied to subscribers and the press. The estimated cost of the campaign is $250,000, of which approximately $26,000 has already been received in gifts and pledges.

Criminal Statistics

In 1926 the number of indictable offenses known to the police was 133,460, being 19,474, or 17 per cent, more than in 1925, and 26,623, or 25 per cent, more than the annual average for the five years 1920-1924, inclusive. This increase appeared to be due largely to exceptional conditions arising out of the general strike. In 1927 there was a fall to 125,703, but the figure is still higher than in 1925, when it was 113,986. The rate per hundred thousand of the population is a better guide. In 1925 the rate was 293.10; in 1926 it rose to 341.62; in 1927 it fell, but it was still as high as 319.94. If the rate for 1926 is left out of account because of the exceptional conditions in that year, the rate for 1927 is the highest recorded for many years, the highest rate previously reached during this century having been 297.83 in 1908. It does not necessarily follow that this indicates a more or less permanent tendency of serious crime to increase under normal conditions. The rise that cul-

minated in the high rate of 1908 followed on and was no doubt in part due to the Boer War; the rise now apparent began, similarly, after the Great War; and the continuance of a high rate in 1927 may be due to some extent to lingering effects of the general strike. The figures for all kinds of offenses against the person were: 1925, 4,621; 1926, 5,147; 1927, 5,379. The figures for homicide (murder and manslaughter) were: 1925, 318; 1926, 297; 1927, 293. The numbers are falling, although the population is increasing. The number of murders committed annually in this country tends constantly to diminish in proportion to the population; the number of "unsolved murder mysteries" tends to diminish almost to the vanishing point. Observers at home and abroad, whatever their views on capital punishment, agree that the strongest deterrent is the certainty of being found out and dealt with. In 1927 the number of persons known to the police to have been murdered was 140; forty-one were infants up to 1 year in age. As regards the forty-one infants up to 1 year, no arrests were made in twenty-eight cases, of which twenty-six were cases of newly born children. Such cases are always difficult to trace and, if traced, many would probably have been dealt with and classified not as murder but as infanticide, concealment of births, and so on.

Road Accidents Increasing

The motor accidents in Great Britain are steadily increasing. The numbers of accidents, of persons killed, and of persons injured have all increased. The total of accidents to mechanically propelled vehicles has risen from 105,463 in 1927 to 117,994 in 1928; 69,208 were accidents to motor cars and taxicabs, 37,450 to motor vehicles, 8,340 to omnibuses and coaches, and 6,018 to electric tramcars and trolley omnibuses. The number killed in these accidents was 5,489, 770 more than in the previous year; injured, 133,431, an increase of 14,996. For every class of mechanically driven vehicle the total of accidents has grown. The smallest increase is in accidents to motor cycle combinations, which have risen by only twenty-nine. Accidents to private cars and taxicabs are up by 6,015; to motor cycles, by 2,380; to motor cycles with pillion passengers, by 1,374, and to motor omnibuses, by 938. Accidents to horse-drawn vehicles declined from 4,922 to 4,723, and the total casualties caused by them have fallen from 5,343 to 5,144, though the number killed is higher by twenty-seven. The proportion of motoring and tramway accidents in England and Wales is much bigger than that in Scotland. The total in England and Wales was 107,236, of which 4,766 were fatal, with 4,897 persons killed. The injured numbered 121,492. The London area shows the biggest total of accidents of all kinds—50,455—with 1,223 persons killed and 54,461 injured.

Commenting on this Lieut. Col. J. A. A. Pickard, general secretary of the National "Safety First" Association, states, as urged in a leading article in the *Times*, that the most hopeful remedy for accidents of all kinds, whether on the street, in industry, or in the home, is education. The association's research into the causes of street accidents during the last three years show that more than 80 per cent were due to failures on the part of the pedestrian, cyclist and motor driver. He points out that the statistics of the 1928 street accidents reveal several interesting facts. Compared with 1927, the total shows an increase of 10 per cent. This is 2 per cent more than the corresponding figures in 1927 and 1926, but is still lower than that of all the previous years since the war.

It is not merely a coincidence that the national "safety first" campaign first took shape at the end of 1925. While the rate of increase for the whole country is 10 per cent, areas which during the whole of 1928 had a local "safety first" organization in existence are able to show better results than cities that had none. Since 1921 there has been an increase of 134 per cent in the number of motor vehicles licensed and an increase of 135 per cent in the number of street accidents. Year by year the rate of increase in these figures has been practically identical. But in striking contrast the corresponding increase in the number of children killed in London is only 40 per cent, proof of the value of "safety first" teaching. Accidents in which motor vehicles other than tramway cars were involved in 1928 totaled 111,976, an increase of 12,326, or 12.5 per cent, as compared with 1927. The corresponding increase in the number of motor vehicles and of motor drivers licensed was only 7.5 per cent. In fact, the ratio of motor accidents both to motor vehicles and to motor drivers is the worst on record. While investigations show that motor drivers are to blame in only a little more than a third of these so-called motor accidents and that there is no marked falling off in the standard of driving during, at any rate, the last three years, it is the presence of motor vehicles which is mainly responsible for the growing toll, and their drivers might well exercise more anticipation of the indiscretions of other road users.

It is the characteristic of the British nation to wish to do as it likes. Pedestrians, cyclists and motorists alike resent any attempt at regulation which might be expected to reduce the toll. For example, neglect of the principle involved in the "walk on the left of the footway" proposal costs some 200 lives of pedestrians yearly. Cyclists bitterly oppose carrying red rear lights or reflectors; motorists resist any proposal to institute proficiency tests. Though children are responding to the educative action which has been taken, the adult is slow to react. So long as traffic goes on increasing, so long must the risk of accident increase. But the association holds that this risk can be lessened by suitable measures. Its principal recommendations are official research into the causes and remedies of accidents; an official safety code for the road, with definite regulations as to priority of traffic at road junctions; a continuous and adequate publicity campaign, and formation of local "safety first" bodies in the principal centers not already covered. The National "Safety First" Association is a purely voluntary organization. It is already doing what it can on these lines and with good results. An effective publicity campaign, however, is a costly matter, and this has been left mainly to private effort. In Canada and Australia government grants are made, but there are no such grants in this country. To extend this campaign, further support is necessary.

PARIS

(From Our Regular Correspondent)

April 10, 1929.

The Sixth International Antitobacco Congress

The sixth International Antitobacco Congress was held in Paris, April 2-5, and was attended by a large number of supporters, among whom were many foreign physicians and economists, especially Germans. Dr. Legrain and Mr. Rolf Horn were the organizers of the congress, and the presidency was bestowed on Dr. Stoklasa of Prague, president of the International Antitobacco League. The daily papers, as usual, contained many humorous allusions to the congress and pointed out that the statistics of every country gave evidence of a marked increase in the consumption of tobacco, especially since a great many women have acquired the habit of smoking—in spite of the fact that the meetings of the antitobacco leagues have become more frequent. Nevertheless, the congress listened to several carefully prepared communications. Dr. Georges Petit presented a comprehensive study on the pathogenic effects of tobacco. Professor Stoklasa spoke on the influence of nicotine on metabolism and on the dynamic effects on the human organism. Dr. Bouchacourt studied the tobacco habit in women and the part it plays in depopulation. Dr. Swoboda of Prague discussed the woman addict in relation to marriage; and Professor Ude of Graz treated the influence of tobacco on the character. Dr. Bonne of Hamburg emphasized the fact that tobacco is

used almost universally by criminals. Many speakers (among others, Professor Stanger of Trautenau, Dr. Brettschneider of Dresden, Dr. Stecker, former minister of Prussia, and Dr. Good) brought charges against tobacco, some speaking in French, others in Esperanto, and pointed out that it is an important factor in the decadence of the race. There was even a secret conference to which only a few persons were invited, at which Professor Brettschneider of Dresden presented certain confidential communications that were not given to the remainder of the conventionists or to the general public. The congress closed with a vegetarian banquet, during which a gift from an outside party was delivered to the president. On being opened, the package was found to contain a box of cigars.

The Proposed Order of Physicians

The proposed creation of an order of physicians continued to be a subject for discussion in professional circles. The recent revelations of fraud perpetrated by physicians in connection with insurance against occupational accidents furnished an excellent occasion for again bringing the subject to the fore, in order to protect the reputation of the medical profession before the bar of public opinion. M. Balthazard, professor of legal medicine at the Faculté de médecine de Paris and member of the Academy of Medicine, is the proponent of a plan that has been discussed in the medical syndicates. It meets with the approval of some, while others say that it is too severe or that it is too weak and impracticable. He has, however, recently submitted his plan to the Academy of Medicine. In reality, the Academy of Medicine is only a scientific body whose functions do not arise from pure science but which serves to give technical advice, solicited or spontaneous, to the government, in connection with the preparation of laws, decrees or regulations concerning public hygiene. It may be said that the academy is going outside its natural functions in dealing with the interests of the profession in matters of ethics. The circumstances appear, however, to be of a sufficiently serious nature to justify its giving consideration to the questions involved. It has therefore appointed a commission composed of MM. Brouardel, Chauffard, Delbet, Gosset, Legendre, Pinard, Roger, Siredey and Weiss to study the project of Professor Balthazard and to propose certain conclusions and resolutions to be adopted. Balthazard's proposal recognizes as its basis the necessity of establishing among physicians special tribunals charged with the repression of professional misdemeanors preceding any intervention by the judicial tribunals. Many misdemeanors of physicians are not covered by the texts of the laws, and, since they affect only the honor of the profession, can be brought only before professional tribunals. If, on the other hand, there are misdemeanors that come under the application of the laws, one may expect that the courts of justice will transform the decisions of the professional tribunals into legal condemnations; for instance, when it is a question of temporary suspension or of permanent withdrawal of the right to practice medicine. The order of physicians, acting as a supreme council on medical ethics, would thus count among its functions the right to watch over the moral conduct of its members. It would attempt to prevent the misdemeanors of common law: fraud, complicity in the illegal practice of medicine (the physician protecting by his diploma the illegal practice of quacks), and the awarding of illegitimate benefits to the beneficiaries of social laws. It would also proceed against a number of professional misdemeanors not subject to the jurisdiction of the courts of justice, yet nevertheless deplorable, such as trickery, the decoying of patients, venally procured testimonials for "patent medicines," the issue of certificates to please one's clientele with little regard to the facts in the case, and other similar forms of trickery. By watching over the confrères who might be tempted or are tempted to neglect the observation of professional rules, the order of physicians would render excellent service by preventing them from starting on the path that leads to the court of correction. A little preventive action would, in most cases, ward off later suppressive measures. But, in order to be effective, the order of physicians must be able to impose severe penalties. In addition to warnings and censure, which are insufficient penalties, it must have the power to prohibit the exercise of certain official functions or of participating in the medical care given holders of social insurance, and even to prohibit (temporarily or permanently) the practice of medicine, either in a department of France or throughout the whole extent of French territory. Such penalties would not be admissible unless the physician incriminated had the right of appealing to a higher court—to prevent all suspicion of conspiracy dictated by hatred or jealousy. Professor Balthazard conceives of the organization of the order of physicians in the following manner: In each department of France, the physicians would elect a council of the order of physicians, presided over by a physician regent, and including the five judges constituting the *chambre de discipline*, or council on medical ethics. In each administrative district having a court of appeals, there would be a regional council composed of four physicians, chosen from the membership of the departmental councils, who had performed their functions for three years at least, and presided over by a magistrate, of the rank of a counselor of the court of appeals. It is to be presumed that these various councils of the order of physicians would not be overburdened with cases. Their mere creation, Professor Balthazard thinks, would suffice to demonstrate to the few physicians who might be inclined to depart from the conduct prescribed by the rules of medical ethics that any infraction of the prescribed rules would be immediately suppressed and that the penalty imposed might be the withdrawal of their right to practice their profession.

Congress on Occupational Diseases

An important Congress on Occupational Diseases was recently held in Lyons, being organized under the chairmanship of Dr. Etienne Martin, with the collaboration of Drs. Agasse-Lafont and Kohn-Abrest, permanent members, for France, of the International Commission on Occupational Diseases. It was the fourth international meeting of this kind and was held in the Great Hall of the Faculté de médecine de Paris. The main topics on the program were: (1) silicosis (silicotuberculosis), presented by Professors Mavrogordato, Boehme, Irvine,, Thiele, Collis and Sternberg; (2) cataract of occupational origin, presented by Professors Esschnig and Rollet, and (3) the endocrine apparatus and intoxications, discussed by Professors Biendi, Ferranini and Pende. In addition, the French group discussed the question, How should "occupational diseases" be interpreted from the standpoint of legislation? In the discussion, the point of view of the General Confederation of Labor and also (by Prof. Etienne Martin) the point of view of medical science were presented. The General Confederation of Labor was represented by about a hundred delegates of the various federations: substructure and underground workers, glaziers, textile workers, workers in leather and hides, chemical products, building trades, metal industries, jewelers' trade, operation of railways. The opening session was presided over by Professor Devoto, president of the Commission internationale permanente des maladies professionnelles and director of the first labor clinic, who, in an address that was well received, expressed the hope that all students of industrial medicine might be brought together in a common union. Prof. Etienne Martin, president of the congress, welcomed the members present and emphasized the importance of the questions that were to be studied. He expressed his appreciation of the collaboration that he had received from scientific circles, employers and workmen, which was indispensable in securing the results desired. The scientific work was begun by the presentation of the subject chosen by the French group, which was presided over by M. Berthiot, divi-

sional inspector of labor, and M. Page, delegate of the minister of labor; namely, as to the definition of occupational diseases. Prof. Etienne Martin, and MM. de la Vergne, Lapierre, Kreter, Steiner and others took part in the discussion. The group presented to the congress a resolution to the effect that there be created, by the minister of public instruction, in the universities located in the industrial regions, university institutes of industrial medicine, in which practical and experimental studies might be conducted on industrial labor and questions pertaining to vocational guidance. The institute of industrial medicine would have the duty: (1) of training industrial physicians (so-called factory physicians), and of giving to the medical body the special instruction needed to practice medicine in the industrial sections; (2) of spreading among the employers and workmen a knowledge of occupational diseases; (3) of studying the conditions under which occupational diseases develop, and (4) of collecting all the material necessary for the study of industrial medicine. This resolution was unanimously approved by the members of the congress. Another important resolution, as a general conclusion of the work of the congress, was voted at the suggestion of M. Lapierre. The main points covered thereby were: (1) the extension of the application of the law to all diseases of occupational origin; (2) needed changes in the composition of the superior council on occupational diseases; (3) appointment, by the minister of labor, of a tripartite commission whose duty it would be to deal with all questions pertaining to occupational diseases; (4) institution of inquiries and collection of statistics on occupational diseases and the number of victims claimed by them each year, and (5) following the example of foreign countries, reorganization of French inspection of labor, with the aid of medical inspectors and special laboratories to be placed at their disposal.

ITALY

(From Our Regular Correspondent)

March 31, 1929.

The Congress of Ophthalmology

The Società italiana di oftalmologia held its fifth national congress in Rome recently, under the chairmanship of Professor Ovio of Padua. Professor Millesovich, the rector of the University of Rome, distributed the prizes awarded this year by the society, as follows: 20,000 lire to Professor Poos of Münster, winner of the Cirincione international prize by his article on "The Physiology and Pharmacology of the Organs of the Eye with Smooth Musculature"; 7,000 lire to Professor Montalti of Rome, winner of the Cidonio prize by his article on "Anterior Bigeminal Eminences in Man"; a gold medal to Professor Gonella of Pisa for didactic and scientific accomplishments, and numerous other money prizes.

Professor Ovio delivered the opening address, in which he recounted the development of the society during the five years of its existence. He spoke in fitting terms in commemoration of the members who died during the year: Professor Lainati of Milan and Professor Alessandro of Messina. He stated that, at the next international congress, to be held in Amsterdam, he had been appointed to present a paper on "Light Perception," while Professor Maggiore would deal with "Trachoma" and Professor Ricchi would consider "Practical Examination of Color Perception in Seamen, Railway Employees, and Others."

Professor Addario of Palermo discussed the topic "The *Bacterium Granulosis* of Noguchi and the New Etiologic, Diagnostic and Therapeutic Criteria That Arise from It." He recalled the recent discovery of the trachoma bacillus by Noguchi, and emphasized that the changes in the eye are studied anatomically and pathologically. He pointed out also the frank histologic differences that exist between the trachomatous follicle and the ordinary follicles of the various forms of conjunctivitis. He mentioned the several culture mediums used by Noguchi, and held that the best of these is 2 per cent agar combined with horse blood, to which pieces of the conjunctiva containing trachomatous follicles are added. Addario obtained almost pure cultures of gram-negative flagellate bacilli, which, when inoculated into receptive animals, produced constantly the anatomopathologic changes of trachoma. He was also able to produce experimentally trachomatous changes in man, the incubation period being four weeks. In view of the infectious nature of trachoma the speaker raised the question of the utility of the employment of antiseptics, in combination with caustic remedies, in the treatment of this morbid process.

Professor Loddoni of Novara presented the subject "Cataract in Copper Workers: Clinical and Experimental Researches." The speaker had seen two cases, one with retention of particles of the metal for a period of seven years, and the other for eight years. The opacity has a characteristic circular form with rays extending from the periphery toward the center of the crystalline lens (the appearance of a wheel). The opacity is visible in an indirect light; it cannot be detected in a direct light or by an ophthalmoscopic examination. Endeavoring to reproduce experimentally this form of cataract by introducing fragments of copper into the vitreous, he observed, after seven months, a diffuse opacity of the crystalline lens and an opacity recognizable in refracted light. With solutions of copper sulphate he noted contractions and projections of the capsule.

Bocci of Novara dealt with a mild eye epidemic, due to the bite of an insect, occurring in the rice fields. The lesions were always monocular, and located in one of the eyelids (commonly the lower) and in the cornea. The type of the lesion indicated the bite of a winged ant, of the family of *Staphylinidae*, which eliminates formic acid.

Kruch and Farina of Milan presented the subject "Endocrine Dysfunctioning in Relation to Glaucoma." On the basis of personal cases of glaucomatous hypertension in which the treatment consisted of miotics and glandular extracts (in all of which a cure was effected), the authors concluded that in many cases the polyglandular dysfunctioning may lead to changes of the ocular tissues, such as hydrophthalmos, simple hypertension in juveniles, and ordinary glaucoma. In such conditions, glandular therapy, associated with the usual local medical care, has been found very useful. Glandular therapy is useful also in the prevention of recurrence after surgical treatment.

Professor Favaloro presented an important communication on the subject "Histogenetic and Histologic Embryologic Researches on the Relations Between the Optic Chiasm and the Hypothalamus in Animals and in Man." The speaker concluded that the hypothalamic region has great histogenetic influence on the development and constitution of the optic chiasm and the optic tracts. These histologic relations explain the anatomic relations and also many pathologic facts, such as the chiasmatic syndromes of ventricular, ependymal and tuberoinfundibular origin.

After the presentation of many other communications by the members of the society, the congress passed a resolution to the effect that opticians may furnish corrective lenses only on prescriptions issued by an ophthalmologist.

The Death of Professor Barduzzi

Announcement has been made of the death, at Siena, of Prof. Domenico Barduzzi, formerly director of the Clinica Dermosifilopatica, and, of late, professor of the history of medicine at the University of Siena. Having been graduated at Florence in 1874, he became an aid in the Clinica chirurgica in Pisa, in which he established the dermosyphilopathic department, the directorship of which was entrusted to him. In 1883, a chair in dermosyphilology having been created in Pisa, Barduzzi was appointed to the post. Later, he removed to the University of Siena, of which institution he served as rector for many years.

A passionate student of hydrology, he became the director of the thermal springs at Castrocaro, and later of the springs at S. Giuliano. In order to give his views on the prerogatives of higher learning, he founded the periodical *L'unione universitaria*, and later *L'università italiana*. In collaboration with Prof. Carlo Fedeli, he directed also the affairs of the scientific journal *Commentari clinici*. He published many works on subjects pertaining to his specialty, and also to hydrology and to the history of medicine.

Scholarships for the Orphans of Physicians Who Died in the War

The committee for the aid of orphans of physicians who died in the war recently held its annual session in Rome, under the chairmanship of General Della Valle of the army medical corps. Secretary Bocchetti presented an account of the work of the committee, from which it appears that, in 1928, 80,000 lire were disbursed in the form of scholarships, and that for 1929 scholarships have been granted to sixty-two orphans. The aid will be continued until their wards have completed their university studies, which term will not be completed until 1942.

The Accademia d'Italia

The Edison Company of Milan has placed at the disposal of the Accademia d'Italia the sum of 10,000,000 lire, in Consolidato bonds paying 5 per cent, the income from which is to be employed to promote scientific researches by the creation of prizes, scholarships, scientific expeditions, and otherwise.

A Course in Military Legal Medicine

The University of Bologna has organized, for the first time in Italy, a course in military legal medicine, the purpose of which is to give the youth of the land an increasingly better insight into military training in general. Professor Giarrusso, colonel in the army medical corps, delivered the inaugural lecture of the course on the subject "The Biologic Content and the Juridical Institutes of Military Legal Medicine."

The Emblem of the Crusade Against Tuberculosis

The *Gazetta ufficiale* has published a decree which establishes that the double red cross is to be regarded, in all effects, as the official emblem of the crusade against tuberculosis. The use of this emblem is permitted solely to the societies and other bodies legally recognized as carrying on antituberculosis activities.

A Monument to Guido Baccelli

A monument to Guido Baccelli, the eminent clinician of the capital who died during the World War, will be erected in Rome, next year, when the centenary of his birth will be commemorated. The monument will be placed in the Passeggiata archeologica, which was devised by Baccelli.

Aid for the Children of Italians, in Foreign Countries

A new society has been founded in Rome, the Fondazione nazionale dei figli del littorio, the object of which is the creation and maintenance of asylums, maternity homes, and seashore and mountain colonies for orphans and the abandoned children of Italians residing in foreign countries. Several scholarships for the benefit of such children have likewise been established at various institutions of the realm.

Conferring of the Title of Senator on a Number of Physicians

The following professors were recently appointed *senatori del regno*, or "senators of the realm": Raffaele Bastianelli, surgeon, of Rome; Sir Aldo Castellani, the eminent authority on tropical pathology; Umberto Gabbi, clinician, of Parma; Giacinto Viola, clinician, of Bologna; Riccardo Versari, anatomist, of Rome; Guaccero, of the University of Bari, and Messedaglia, of the University of Padua.

BERLIN

(From Our Regular Correspondent)

April 13, 1929.

Modern Trends in Psychiatry

Addressing the Hamburger Aerztlicher Verein recently, Professor Weygandt, director of the large psychopathic hospital in Hamburg, delivered an address on the subject of modern trends in psychiatry. The following extracts from his address are adapted from an article in the *Deutsche medizinische Wochenschrift*. Weygandt stated that, up to the close of the previous century, psychiatry followed a purely symptomatodescriptive trend, basing its sole reliance on the revelations of a detailed study of the anatomy of the brain. Kraepelin still followed that trend in the first edition of his famous textbook, but, in later years, influenced by the example of Kahlbaum, it became his aim to produce connected descriptions (life portraits, as it were) of various psychoses by means of anamneses and katamneses, critical analysis of the patient's condition, long continued observation of the course of the morbid process, research work as to the causes, and as exact descriptions as possible of the anatomic observations. In that manner he described large series of cases of dementia praecox and cyclothymia, or cyclic insanity. Critics (Hoche, for example) urged that the diagnosis be confined to syndromes. More thorough analyses of Birnbaum and others show more and more clearly that every case represents the product of several factors, as Kraepelin himself admitted. In recent years, not only a number of different trends, or schools, have developed in the broad field of psychiatry, but also a number of special branch subjects have been introduced. The latter are auxiliary sciences, and are represented in the Kraepelin research institute by eminent specialists and investigators; for example, anatomy of the brain in its widest extent; also histopathology, serology and biology, research on hereditary transmission in general and particularly in the field of psychiatry, and, finally, experimental psychology.

Among the various trends, or schools, in psychiatry is the philosophic trend, which represents the psyche as something which cannot be affected by any pathologic condition; it being only the brain proper that becomes affected. There are several psychologic trends that might be mentioned. As to popular psychology, it leads to a superficial, often contradictory presentation of obscure notions and an overrating of the intellectual side. The analytic trend has a certain justification, even in the presence of disturbances of organic origin, but, in the last analysis, the objective introspection is, in the nature of the case, inexact. Kronfeld's autologic psychiatry lacks a firm basis; that is even more true of "metapsychology" with its telepathic and spiritistic fantasies. Psychoanalysis has certain fundamental values, but it furnishes possibilities rather than definite truths, and, from a therapeutic point of view, it has no bearing on psychoses. Its application in schizophrenia has yielded little of value, and its employment in paresis appears inappropriate. With reference to these trends, experimental psychology serves as an auxiliary discipline, which, through the employment of exact conditions of experiment, under variable factors, seeks to obtain comparable figures and measurements, and, in certain cases, it proves very useful. Neurologic and anatomic research is for the clinician exceedingly valuable as a form of investigation, but if regarded as a special trend it is likely to become aberrant. Psychic research would thereby be reduced to a mere handmaid of epiphenomenology, and, in addition, it would likely give rise to a mythology of the brain; witness, for example, the alleged localization of the psychic principle in the brain stem, the postulation of "organs of association," and the like. On the other hand, the progress of histologic research has been extraordinary; paresis has been to a large extent successfully explored; schizophrenia and epilepsy

have been cleared up in part, and degenerative processes and metencephalitis have benefited by the light of research.

Many important problems still remain. As yet there has been little opportunity to study systematically the brains of various stems and races or the brains of eminent men. The constitutional trend includes research based on serology, biology, bacteriology, chemistry and hereditary transmission. The diagnosis of syphilis has made great progress, and the treatment of hypothyroidism with glandular substances has opened up enticing prospects. We are getting a clear understanding of the hereditary processes involved in schizophrenia, cyclothymia and epilepsy. In every case, a certain causal influence must be ascribed to heredity, to the genotype, to the phenotype, to the forms of education and environment—and often also to external injuries. Congenital idiocy is one of the most intensively endogenous manifestations. But even in exogenous conditions such as alcoholism and morphine addiction a degenerative substratum plays a part. Through researches on the fundamental hereditary constitution, the effects of environment on the course of life, reconstruction (as far as possible) of the personality as manifested previous to illness, thorough physical examination with the aid of biologic methods, and through observations made with the help of the deeper conceptions of psychology, including experimental psychology, if needed, we must acquaint ourselves with the development of a psychosis and thus bring it under a definite classification and assign it to a particular group. But that being done, there still remains the task in each individual case of studying the intensity of the disturbance with the aid of all available practical methods. In every group, along with the severe cases, there are the moderate and the very mild cases, and the abortive types, which lack a truly distinctive character. The groups may be subdivided into: (1) exogenous main group: (*a*) physical (especially, traumatic) causation, (*b*) chemicotoxic origin, and (*c*) infectious origin; (2) somatogenic main group: (*a*) encephalopathies due to degeneration, arteriosclerosis, tumor, etc., and (*b*) endocrine disturbances; (3) endogenous main group: (*a*) endocrine influence, schizophrenia, (*b*) of hereditary endogenous origin: cyclothymia, and (*c*) the psychogenic predisposition that appears in relation to external influences; (4) a collective group considered as a provisional classification: epileptoid attacks, and (5) as a group justified for practical reasons: arrested development in juveniles.

The psychiatric institutes must be therapeutic centers for symptomatic and also for causal treatment, for which future prospects are rather favorable. It is important that patients shall be rather intensively employed. Early dismissal is desirable, with outside care, under the supervision of a psychiatrist. Prophylaxis is essential: crusade against narcotics, infection, and the like; but also through prevention or limitation of propagation among psychopathic persons.

Proposed Therapeutic and Research Institute for Combating Mental Disease

Through the cooperation of the city and the Kaiser Wilhelm-Gesellschaft zur Förderung der Wissenschaften, Berlin is planning the creation of a new therapeutic and research institute for the combating of mental disease. The new institute will be located in Buch, a suburb of Berlin, and will utilize existing buildings and will develop an extensive parcel of land in association with the municipal psychopathic hospital there. The new institute will serve three purposes: the knowledge already obtained will be extended through intensive research work; it will constitute a training school for psychiatrists, and, finally and chiefly, it will serve as a therapeutic center in which intensive treatment of mental patients will be carried out. The hope appears justified that foreign countries will aid financially in the realization of the plan.

Marriages

FREDERICK C. ARMSTRONG, Harlan, Iowa, to Miss Helen Mortensen of Council Bluffs, at Kansas City, Mo., March 4.

HELMER WALTER HUSEBY, Cloquet, Minn., to Miss Agnes L. Kealy of Duluth, April 1.

WILLIAM KENT PUDNEY to Miss Alice Gates, both of Montclair, N. J., May 1.

Deaths

James Winfield Cokenower, Des Moines, Iowa; College of Physicians and Surgeons, Keokuk, 1877; Kentucky School of Medicine, Louisville, 1880; member of the Iowa State Medical Society; at one time professor of orthopedic surgery, medical department of Drake University; formerly on the staffs of the Iowa Methodist Hospital and the Mercy Hospital; aged 75; died, April 16, of pneumonia.

Edward R. Hardenbrook ⊕ Rochester, N. Y.; College of Physicians and Surgeons, Baltimore, 1893; University of Buffalo School of Medicine, 1894; on the staffs of the Highland, St. Mary's and the Park Avenue hospitals; aged 58; died, March 28, at sea, of sunstroke and malaria, contracted in Africa while on a trip around the world.

Douglas Drummons Bonnyman, Middletown, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1920; member of the American Psychiatric Association; served during the World War; aged 35; on the staff of the Middletown State Hospital, where he died, April 27, of acute dilatation of the heart.

Thomas Rice Welch ⊕ Nicholasville, Ky.; Hahnemann Medical College and Hospital, Chicago, 1885; president of the Jessamine County Medical Society; formerly state senator; for ten years member of the board of education; aged 69; died, April 24, of burns received when his home caught fire.

Stephen Simpson Halderman ⊕ Portsmouth, Ohio; Medical College of Ohio, Cincinnati, 1875; past president of the Ohio State Medical Association; on the staff of the Portsmouth General Hospital; aged 77; died, March 30, of cerebral embolism and arteriosclerosis.

Harold Edmonds Hewlett, Babylon, N. Y.; Columbia University College of Physicians and Surgeons, 1898; member of the Medical Society of the State of New York; on the staff of the Southside Hospital, Bayshore; aged 55; died, April 15, of heart disease.

Alexander Ross Matheson ⊕ Brooklyn; University of Michigan Medical School, Ann Arbor, 1870; Civil War veteran; past president of the Kings County Medical Society; on the staff of the Methodist Episcopal Hospital; aged 84; died, April 26, of senility.

T. Orlando Helfrick, Spangler, Pa.; Cincinnati College of Medicine and Surgery, 1892; member of the Medical Society of the State of Pennsylvania; bank president; on the staff of the Miners' Hospital of Northern Cambria; aged 57; died, April 15.

Edwin Lightner Nesbit, Deland, Fla.; Hahnemann Medical College and Hospital of Philadelphia, 1904; formerly a practitioner in Pennsylvania; aged 50; died, April 16, at the Deland Memorial Hospital, as the result of an automobile accident.

John P. Fennessy, Providence, R. I.; College of Physicians and Surgeons, Baltimore, 1905; formerly member of the state legislature; on the staff of St. Joseph's Hospital; aged 56; died, March 26, of lobar pneumonia and cerebral arteriosclerosis.

Silas C. Frederick ⊕ Wilmington, Del.; Baltimore Medical College, 1894; for two years president of the board of health; for many years on the staff of the Homeopathic Hospital; aged 58; died, April 4, in Atlantic City, N. J., of myocarditis.

Levingston Lindsey Shropshire, San Antonio, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1885; member of the State Medical Association of Texas; aged 71; died, April 18, of carcinoma of the stomach.

DeWitt Talmadge McGriff ⊕ Lima, Ohio; Ohio State University College of Medicine, Columbus, 1912; member of the Radiological Society of North America; aged 45; on the staff of St. Rita's Hospital, where he died, April 19, of influenza.

Walter Anson Smith, Shelburne Falls, Mass.; University of Vermont College of Medicine, Burlington, 1882; member of the Massachusetts Medical Society; formerly on the staff of the Mercy Hospital, Springfield; aged 72; died, March 28.

Andrew Jackson Smith ⊕ Pawhuska, Okla.; Kansas Medical College, Topeka, 1897; past president of the Osage County Medical Society; formerly on the staff of the Pawhuska Municipal Hospital; aged 73; died, April 5, of pneumonia.

Francis Wisner Murray, South Ashfield, Mass.; Medical Department of Columbia College, New York, 1880; member of the Medical Society of the State of New York, and the American Surgical Association; aged 73; died, April 12.

David Russell Talbott, Dunkirk, Md.; College of Physicians and Surgeons, Baltimore, 1897; member of the Medical and Chirurgical Faculty of Maryland; aged 53; died, April 28, at the home of his brother in Washington, D. C.

Samuel Searle Houlton, Baltimore; Baltimore Medical College, 1897; member of the Medical and Chirurgical Faculty of Maryland; aged 56; died, March 24, at the Physicians' Hospital, Thief River Falls, Minn., of heart disease.

Rufus Anderson Kingman, Wallingford, Vt.; Harvard University Medical School, Boston, 1882; formerly on the staff of the City Hospital and St. Elizabeth's Hospital, Boston; aged 70; died, March 28, of angina pectoris.

Olin Estes Shankle ⊕ Commerce, Ga.; Atlanta College of Physicians and Surgeons, 1904; past president of the Jackson County Medical Society; aged 49; was found dead in his automobile, March 31, of angina pectoris.

Maurice Stevenson Weaver ⊕ Gettysburg, Pa.; Medico-Chirurgical College of Philadelphia, 1916; served during the World War; aged 41; on the staff of the Warner Hospital, where he died, March 10, of pneumonia.

William David Teagarden ⊕ Washington, Pa.; Western Reserve University School of Medicine, Cleveland, 1880; Bellevue Hospital Medical College, 1889; on the staff of the Washington Hospital; aged 76; died in April.

David Hugh MacKenzie ⊕ Millbrook, N. Y.; Medical Department of the University of the City of New York, 1889; formerly health officer of the village of Millbrook; aged 68; died, March 21, of angina pectoris.

Joseph Omer Ledoux, Sherbrooke, Que., Canada; Montreal School of Medicine and Surgery, 1896; president of the medical staff and chief surgeon of St. Vincent de Paul Hospital; died, May 1, of cirrhosis of the liver.

Elbert H. Loughran ⊕ Kingston, N. Y.; Bellevue Hospital Medical College, New York, 1873; health officer of Kingston; on the staff of the Kingston Hospital; aged 77; died, April 29, of pneumonia.

Milton S. Williamson, Findlay, Ohio; University of Wooster Medical Department, Cleveland, 1874; member of the Ohio State Medical Association; aged 78; died, April 24, of cerebral hemorrhage.

George Robert Peebles, Cedar Falls, Iowa; Hahnemann Medical College and Hospital, Chicago, 1890; aged 63; died, March 29, at the Independence (Iowa) State Hospital, of cerebral hemorrhage.

Thomas Benton Plowman, Georgetown, Ill.; Indiana Medical College, Indianapolis, 1878; aged 78; died, April 20, at the Lake View Hospital, Danville, of uremia and hypertrophy of the prostate.

Burdett O'Connor, Detroit; Long Island College Hospital, Brooklyn, 1896; veteran of the Spanish-American and World wars; aged 59; died, April 14, of cerebral hemorrhage and arteriosclerosis.

William Henry Harrison, Midway, Ala.; Chattanooga (Tenn.) Medical College, 1893; member of the Medical Association of the State of Alabama; aged 58; died, Dec. 22, 1928, of tuberculosis.

Robert Barker Williams, San Francisco; Medical Department, University of California, 1887; served during the World War; aged 68; died, April 8, of heart disease and chronic nephritis.

Darius Earl Musgrave, Barboursville, W. Va.; College of Physicians and Surgeons, Baltimore, 1902; member of the West Virginia State Medical Association; aged 59; died, March 16.

Robert Andrew Simpson, Hot Springs National Park, Ark.; Memphis (Tenn.) Hospital Medical College, 1899; member of the Arkansas Medical Society; aged 55; died, March 31.

Ernest Diggs, Shelbyville, Ky.; Louisville National Medical College, 1912; aged 47; died, April 22, at the City Hospital, Louisville, of a skull fracture received in an automobile accident.

John Theodore Wolf ⊕ Seattle; Medical Department of St. Louis University, 1905; aged 53; died, March 30, of shock and myocarditis, following an operation for frontal sinusitis.

Zell L. Baldwin, Kalamazoo, Mich.; Eclectic Medical Institute, Cincinnati, 1888; formerly mayor of Niles; aged 65; died, April 28, of peritonitis and carcinoma of the stomach.

Louis Hollander, New York; Atlanta College of Physicians and Surgeons, 1905; aged 46; died, March 30, at the Jewish Memorial Hospital, of pulmonary tuberculosis.

Nelson H. Marshall, Chaska, Minn.; University of Minnesota College of Medicine and Surgery, 1892; health officer of Chaska; aged 69; died, April 5, of heart disease.

Michael Placzek Rich, New York; Medical Department of Columbia College, New York, 1894; aged 62; was killed, April 12, when he fell from a window.

Elmer Ray Gladstone ⊕ Walton, N. Y.; Albany Medical College, 1913; health officer of Delaware County, and Walton; aged 39; died, April 1, of influenza.

Benjamin L. Dillard, Scottsville, Va.; University of Maryland School of Medicine, Baltimore, 1883; aged 71; died suddenly, April 12, of heart disease.

James A. Crooke, Baltimore; Meharry Medical College, Nashville, Tenn., 1922; aged 30; died, February 13, at the Provident Hospital, of typhoid.

William H. Rusk, Lagrange, Ga.; Southern Medical College, Atlanta, 1894; formerly on the staff of the Dunson Hospital; aged 56; died, April 10.

Jacob Leshur Schoch, Shippensburg, Pa.; University of Maryland School of Medicine, Baltimore, 1870; aged 86; died, April 5, of chronic nephritis.

Donald Edwards Bell ⊕ Evanston, Ill.; Indiana University School of Medicine, Indianapolis, 1922; aged 33; died, April 20, of Banti's disease.

Pando Y. Kamenoff ⊕ New York; Medical Department of the University of the City of New York, 1894; aged 62; died, April 9, of angina pectoris.

Thomas Lorenzo Holcombe ⊕ Jefferson, Ga.; University of Georgia Medical Department, Augusta, 1913; aged 50; died, April 4, of heart disease.

Charles V. Evans, Cooperstown, N. Y.; New York Homeopathic Medical College and Hospital, 1893; aged 64; died, April 9, of myocarditis.

Edward C. Von Tress, Vincennes, Ind.; Medical Department Butler University, Indianapolis, 1883; aged 77; died, in April, of myocarditis.

Henry Grady Carter ⊕ Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1913; served during the World War; aged 37; died, April 4.

Alfred Christie, Brunswick, Ga.; College of Physicians and Surgeons, Baltimore, 1897; aged 65; died, April 19, of cerebral hemorrhage.

William Bailey, Nashville, Tenn.; University of Nashville Medical Department, Nashville, 1885; aged 65; died, April 20, of paralysis agitans.

Owen M. Slater ⊕ Atwood, Ill.; Medical Department of the University of Illinois, Chicago, 1895; aged 67; died, April 2, of myocarditis.

Judson O. Roberts ⊕ Denver; University Medical College of Kansas City, Mo., 1892; aged 65; died suddenly, March 20, of thrombosis.

Clayton T. Shepherd, Dayton, Ohio; Medical College of Ohio, Cincinnati, 1889; aged 61; died, April 26, in a hospital at Cincinnati.

John B. Ralph, Omaha; Rush Medical College, Chicago, 1869; Civil War veteran; aged 88; died, March 29, of myocarditis.

James A. Mangham, Ringgold, La.; Louisville (Ky.) Medical College, 1886; aged 74; died, March 30, of acute edema of lungs.

Peter Brown Wyckoff, New York; Bellevue Hospital Medical College, New York, 1870; aged 83; died, April 14.

James J. Smoot, Bethel, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1875; aged 82; died, April 21.

Joseph Webb, Dayton, Ohio; Cincinnati College of Medicine and Surgery, 1879; aged 77; died, April 4.

William Parks Barratt, Greenwood, S. C.; Louisville (Ky.) Medical College, 1885; aged 67; died, April 9.

James T. Dyer, Mohawk, Tenn. (licensed, Tennessee, 1889); aged 70; died, March 20.

Correspondence

METHODS OF HYPERRESPIRATION FOR THE TREATMENT OF HYPERTENSION

To the Editor:—Because of inquiries received regarding the method of hyperrespiration suggested as a treatment for hypertension (THE JOURNAL, April 6), may I say that future investigations of the question will no doubt prove or disprove my theory. The subject is still in the stage of experimentation. I have refrained from describing a definite routine technic of the procedure because, though in my experience the individual variations in the cases were great, the number of cases were too few to permit final conclusions. What I should emphasize is individual study of respiratory functional characteristics and a method of feeling one's way toward the improvement of respiratory expansion of all parts of the lungs simultaneously to the limit of possibility, to teach the "feeling" of good respiratory expansion at this optimum, and urge the maintenance of this optimum for as long periods as possible. The thing I should mostly warn against is indiscriminate hyperventilation exercises of the "intensive breathing" sort, which tend to exhaust the patient. Breathing exercises that make the patient work are doomed to failure. Hypertensive patients to whom breathing for auscultatory purposes is work are the mediums suitable for this treatment. If they can be taught to breath without being worked, the results are assured.

While being trained, these patients must be taught a slow, deliberate, prolonged breathing. In the training period breathing exercises should not last longer than from five to seven minutes. When the breathing is full, even throughout both lungs, the state of expansion should be noted and impressed on the patient as the desirable state he should train himself to obtain and maintain as often as feasible, for as long periods as possible. It is then left to the patient himself to choose the time for his exercises, which he is to take up as a daily routine for at least four to six times a day.

When satisfactory deep respirations seemed most difficult to obtain, I found that the best method of training is the following: The patient is told to prolong expiration as long as possible by letting escape the air very gradually and withhold inspiration for a short time after full expiration. The following inspiration is thus started with some air hunger and from a lowered level. The patient is then instructed to make his inspiration similarly slow and gradua'. This is all the more important because these patients usually inspire forcibly and rapidly, their tubes are thus abruptly overfilled, and this is probably what interferes with proper expansion of the pulmonary periphery. My experience is that on auscultation there is very little heard at the periphery of such forceful and abrupt inspirations.

Blood pressure readings should be as few as possible. The patient need not even be told that the procedure is expected to reduce his blood pressure. The patient should be impressed with the necessity of the procedure as a measure to correct his faulty breathing, which is responsible for many of his symptoms, the relief of which may be promised if he is cooperative.

Dietary habits of patients should be controlled only as there are indications that flatulence or spasms, abdominal phenomena interfering with free diaphragmatic movements, must be attended to.

I was impressed with the extent of hyperrespiration these patients tolerate without the slightest symptoms of hypocapnia. They do not develop giddiness or pallor, and I have never observed an indication of a Chvostek sign. Some of these patients can maintain forced respiration for such long periods that I came to believe these individuals incapable of real hyperventilation. As a matter of fact, my patients assure me that they can relieve headache and giddiness by their breathing exercises.

ISRAEL RAPPAPORT, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TESTS FOR DETERMINING PATERNITY

To the Editor:—Kindly supply illumination on the following: A young unmarried girl gives birth to a child. Ten or fifteen of the best men in the neighborhood (sexually speaking), and including the father of the girl, are suspected of parentage of the infant. 1. Are there any biologic tests that will furnish definite, legal information, either positive or negative, of the relationship of the child as a result of incestuous copulation? 2. Is there a test that will determine whether or not a full blooded Sioux Indian, one of the suspects, is the father? 3. Aside from the father of the girl and the Sioux Indian, I understand that the only hope of warding off suspicion lies in negative tests.

F. E. BOUZA, M.D., White River, S. D.

ANSWER.—1. By determining the blood groups to which the persons concerned belong it is possible to tell whether a certain man may be the father of the child, that is, belongs to the appropriate blood group or groups, but it is not possible by means of blood grouping or any other test to tell that a given man is the father of a given child. Such a test might show, however, that a certain man could not be the father.

2. There is no test by which it can be determined that the father is of the Indian race. The racial individuality of a person cannot be determined by any known blood test.

3. A negative test, that is, a test showing nonpaternity, will hold in all cases no matter what the race may be, Indian or otherwise.

PRESCRIPTION OF REMEDIES IN ACCORDANCE WITH ETHICS

To the Editor:—What should the attitude of an ethical physician be toward the various medicines that are placed on the market under a trade name? To make it clear, for instance, some physicians prescribe pantopon instead of morphine. And then there are the various heart medicines that contain a mixture of various drugs, as strychnine and digitalis. I have had good results with "Caprokol," which is a trade name for hexylresorcinol. Is it wrong to prescribe "Caprokol" using that name?

GILBERT H. JOHNSON, M.D., Washington, D. C.

ANSWER.—The Principles of Medical Ethics of the American Medical Association contains the following with regard to the prescribing of medicines: ". . . it is . . . unethical to prescribe or dispense secret medicines or other secret remedial agents, or manufacture or promote their use in any way." It contains no provision holding it unethical to prescribe proprietary medicinal preparations of declared known composition.

If physicians will limit their prescribing to the medicinal products included in the United States Pharmacopeia, the National Formulary, and New and Nonofficial Remedies, they may be confident that they are not prescribing secret remedies; they should be mindful, however, that the National Formulary contains many drugs and drug mixtures that are practically worthless, and that preparations in New and Nonofficial Remedies are new and, though worthy of trial, are in some instances still more or less in the experimental stage. For a guide to prescribing, the Epitome of the U. S. Pharmacopeia and National Formulary, and New and Nonofficial Remedies—books issued by the Council on Pharmacy and Chemistry of the American Medical Association—are to be recommended. The Epitome lists the products included in the Pharmacopeia and National Formulary, including a brief statement of the therapeutic efficacy and uses of these products; New and Nonofficial Remedies is issued annually and contains an up-to-date description of the proprietary medicinal preparations which have been found acceptable by the Council on Pharmacy and Chemistry.

ABSCESS FORMATION FOLLOWING INJECTION OF CALCIUM LACTATE

To the Editor:—Recently a patient under Sippy treatment for some months developed intense vomiting with tetany. The carbon dioxide combining power was 100 per cent by volume. As an emergency measure, calcium lactate solution, 5 per cent, was given subcutaneously under apparently aseptic precautions, with the result that the tetany disappeared; but several days later the patient developed signs of abscess formation at the site of injections. A number of these areas were incised, but no pus was evacuated. Please inform me whether calcium lactate usually produces irritation of this sort. Please omit name. M.D., Arizona.

ANSWER.—Calcium lactate is too irritative to be given subcutaneously. In emergencies, calcium compounds are best administered by intravenous injection.

DR. EUGENE UNDERHILL

To the Editor:—Information at hand indicates that Dr. Eugene Underhill, Jr., of Philadelphia, Pa., is identified to some extent with an organization known as the Farmers' Protective Association. The object of this association is to defeat the purposes of bovine tuberculosis eradication. At your earliest opportunity, will you please give me a little history of Dr. Eugene Underhill, Jr., as well as Dr. Eugene Underhill, Sr., of Philadelphia, Pa., advising whether these doctors are registered practitioners of human medicine in the state of Pennsylvania, their standing in the community, etc.? BUREAU OF ANIMAL INDUSTRY, Albany, N. Y.

ANSWER.—According to our records, Dr. Eugene Underhill, Jr., of Philadelphia was born in 1887, was graduated by the University of Pennsylvania School of Medicine in 1914, and was licensed to practice in Delaware the same year and in Pennsylvania in 1915. He is a member of his local medical society and a Fellow of the American Medical Association.

Dr. Eugene Underhill, Sr., the records show, was graduated by Hahnemann Medical College and Hospital (Homeopathic), Philadelphia, in 1893 and was licensed to practice in Pennsylvania the same year. He is not a member of his local medical society or of the American Medical Association. Dr. Underhill, Sr., seems to be, or to have been, if he is not now, prominently connected with a concern known as the "Philadelphia School for Nurses," which is affiliated with the Central Hospital of Philadelphia. The doctor was, it appears, treasurer of both institutions, which were said to be "separately incorporated" but "operated jointly."

The Philadelphia School for Nurses seems to have been in bad odor a few years ago and the Pennsylvania State Board of Examiners for the Registration of Nurses refused to recognize it. As a result of this action, Dr. Underhill seems to have brought suit against the board and, apparently, petitioned the governor of the state in the matter. The answer to the petition, on the part of the state board, excoriated the Philadelphia School for Nurses.

The Central Hospital has advertised that, by arrangement with the Underhill Laboratory (the two have the same telephone number), the Abrams methods of diagnosis and treatment would be given. The same advertisement (which appeared in the *Bulletin of the Philadelphia School for Nurses*) declared that a long list of pathologic states might "be expected to yield promptly" to the Abrams treatment. The various ailments were arranged alphabetically and included appendicitis, asthma, brain diseases, cancer, cataract, diabetes, diphtheria, goiter, gonorrhea, heart trouble, hemorrhoids, insanity, locomotor ataxia, pernicious anemia, sarcoma, syphilis, tetanus, tuberculosis and x-ray burns.

The name of Dr. Underhill, Sr., appears as a member, and that of Dr. Underhill, Jr., as an associate member, of the "International Hahnemannian Committee on the Abrams Method of Diagnosis and Treatment." The International Hahnemannian Association has been repudiated by the American Institute of Homeopathy, the official national organization of the homeopaths. In fact, the internal evidence would seem to demonstrate that the International Hahnemannian Committee was brought into existence to advertise the Abrams cult.

A program of the Twelfth Annual Convention of the "American Association for Medico-Physical Research," held in September, 1923, in Chicago, stated that there was to be read "A Symposium of Short Reports" on the Abrams method by those who had had at least six months' experience in the use of the "Electronic Reactions of Abrams." It was stated that among those who had already promised written reports was Dr. Eugene Underhill (whether junior or senior was not stated) of Philadelphia. The American Association for Medico-Physical Research, which was dealt with at some length in THE JOURNAL, Sept. 19, 1925, was organized, apparently, to sponsor every physical therapy fad from the Abrams cult up—or down—and numbered among its members unbalanced enthusiasts, faddists and advertising quacks.

In February, 1927, the Board of Education of Trenton, N. J., informed us that the Drs. Eugene Underhill were initiating a program of obstruction of the Schick test, which reputable physicians of Swarthmore (a suburb of Philadelphia) were planning to give in the local schools.

In February, 1928, the Medical Society of the State of Pennsylvania informed us that a Dr. Eugene Underhill of Philadelphia had been to Washington, D. C., where he "appeared, it is alleged, before a subcommittee on agriculture of the Appropriations Committee of the House of Representatives, stating that human tuberculosis is not transmissible nor a dangerous diseases." They added that Dr. Underhill was active "throughout the state [Pennsylvania] and at Washington as a representative of the Farmers' Protective Association, apparently a branch of the Liberty League, in regard to the subject of tuberculosis and cattle."

In June, 1928, the state veterinarian of Iowa informed us that a Dr. Eugene Underhill of Philadelphia had appeared in an Iowa town to testify against the reliability of the tuberculin tests in diagnosing tuberculosis in cattle. Our correspondent quoted Dr. Underhill as saying that tuberculin renders the milk of healthy cows unfit for human food.

TREATMENT OF WHIPWORM INFESTATION

To the Editor:—Please give me the treatment for the eradication of whipworms. I find no reference to treatment in the textbooks. Please omit name. M.D., Virginia.

ANSWER.—Unfortunately, it is impossible to eradicate the parasite with any degree of thoroughness. Anthelmintics may be tried. Rectal irrigations with benzene, from 15 to 60 cc. (1 to 4 drachms) per liter (quart) of water, have been recommended.

TREATMENT OF NEURITIS

To the Editor:—I should like to know whether there is serum, vaccine or any preparation that can be given hypodermically that will benefit a neuritis, especially a sciatic neuritis. Please omit name.

M.D., Pennsylvania.

ANSWER.—It is problematic whether a neuritis persisting after removal of focal infection will be benefited by autogenous vaccine.

ENURESIS IN ADULT

To the Editor:—A man, aged 25, has been suffering from bed-wetting for about six years. Heavy lifting also causes urine to be extruded. He has a urinary retention of about 1 pint and 11 ounces. The prostate is not enlarged or tender on rectal examination. The urine is cloudy, is acid in reaction, and has some pus in it. He came to me about two months ago. He then had a stricture about F. 22 which has been gradually dilated to F. 30 but without effect on the retention. He has no signs of hereditary or acquired syphilis. The ankle jerks could not be obtained. The knee jerks are sluggish but are normal under "reinforcement." The pupils are normal in size and reaction and are equal and regular. Romberg's and other tests for diseases of the central nervous system are negative. After catheterizing, he does not wet the bed for one or two nights. He is married and has a healthy baby and wife. The wife has had no miscarriages. There is no history of venereal infection. The blood Wassermann reaction is negative. Otherwise he has good health. What is the probable cause of this retention? What treatment would you advise? Is lumbar puncture indicated? Please omit name.

M.D., Missouri.

ANSWER.—The history of the patient and the symptoms reported suggest strongly the existence of a more or less pronounced spina bifida.

Roentgen examination should be employed in order to clear up the situation.

Epidural injections of an indifferent fluid, for instance physiologic solution of sodium chloride, are apt to relieve the enuresis.

EFFECTS OF ETHYL GASOLINE ON THE EYES

To the Editor:—In a recent workmen's compensation case which has come to my attention, a youth of 17 has lost approximately 80 per cent of his eyesight by having ethyl gasoline splashed into his eyes. I do not seem to be able to find any information on this subject, that is, the effect of tetra-ethyl lead on the eyes, and I am wondering whether you have any information on this subject. LESLIE O. WRIGHT, Buffalo.

ANSWER.—A distinction should be made between the action of tetra-ethyl lead, and tetra-ethyl lead gasoline. Tetra-ethyl lead in concentrated form does not reach the public or filling station operators. In any considerable quantity, tetra-ethyl lead may be expected to injure the tissues of the eyes directly if contact is brought about. Ulceration is the action to be anticipated. Tetra-ethyl lead gasoline contains so small a quantity of the organic lead compound in the amount that might be splashed into the eyes that any action other than that which might arise from any gasoline is at this time not known. Ordinary gasoline splashed into the eyes may induce a severe inflammation which, if uncontrolled, may lead to corneal ulcers, iritis and similar conditions.

Morton (Pub. Health Bull. 158, 1925) states with reference to eye lesions from tetra-ethyl lead gasoline:

> The particular cases which have come to my attention, about forty in all, are mostly eye cases and skin irritations. The eye cases occur at the stations, when the station men in filling up the gas tank at times swing the hose around, spilling the gasoline in their own eyes or the customers' eyes. . . . If the ethyl gasoline gets into the eyes, from my experience, it only produces an irritation which lasts from twelve to twenty-four hours. It is not much different from spilling gasoline in the eyes, though the smarting is probably more severe. For treatment we have recommended washing the eye out with water or boric acid solution, and then using drops of paraffin oil in the eye.

If it may be shown that the general exposure to tetra-ethyl lead gasoline, of which the eye splashing was only a small part, led to the encephalopathy characteristic of this form of lead poisoning, visual impairment due to central nervous system involvement is likely, and is in fact known to occur in lead poisoning from inorganic compounds.

TREATMENT OF PAIN AFTER SHINGLES

To the Editor:—By request I forward you this query for solution. Please outline treatment. For two months I have had what was called shingles. The eruption on half the breast, side and half the back has about gone, but the skin is sore to the touch, it itches, and the infernal pain throughout the entire chest is annoying to say the least. It feels sometimes as if my shirt were filled with cockle-burs. What is the cause of shingles? What the duration? In this case what is the treatment?

M.D., Indiana.

ANSWER.—Shingles, particularly in persons past middle life, not uncommonly leaves a sensitiveness for several weeks or months in the area which previously was the site of the eruption. This is really a form of neuralgia and, though often distressing, entirely disappears in time, even in the absence of treatment. Relief is afforded, however, by the taking of acetylsalicylic acid in a dosage of 0.3 Gm. (5 grains) after each meal and before retiring, with or without applications of dry or moist heat or mentholated ointments.

Shingles is caused by an infection of the nerve root and most cases run their course in from two to six weeks.

SALICYLIC ACID FOR REMOVAL OF SKIN

To the Editor:—What is the strength of salicylic acid used in "peeling the face"? Can you suggest some other preparation to use for brown skin?

M.D., Canada.

ANSWER.—Salicylic acid may be used in a paste in strengths of from 5 to 20 per cent. This may, however, cause a violent reaction, lasting several days and, in addition, such a reaction may be followed by still greater pigmentation. A safer method, though one not entirely without risk, is to dab on three or four time a day, until desquamation is produced, the following:

	Gm. or Cc.	
Mercuric chloride	0.05	gr. j
Zinc sulphate	0.3	gr. v
Tincture of benzoin		
Alcohol		
Water	āā 10	3 iii

Mix and label poison, for external use only.

If this is not strong enough, the first two amounts may be doubled. When desquamation occurs, the treatment should be stopped. Many other combinations have been used; but this is one of the safest and most satisfactory.

GAS PRESSURE CREATED BY DECOMPOSING BODY

To the Editor:—Please publish such information as is available relating to the amount of gas pressure created by a decomposing human body. Assuming that the body is in a so-called air-tight casket or metal burial vault during decomposition, what is the approximate maximum gas pressure per square inch?

GEORGE JONES, M.D., Toledo, Ohio.

ANSWER.—The gas formed in a dead body from postmortem decomposition will exert enough pressure to force the content of the stomach up into the esophagus and pharynx, and such partly digested food is often found in the large air passages. The wall, or inner layers of the wall, of the rectum may be forced out through the anus, the tongue from the mouth or the uterus through the vagina enough so that it projects externally.

The products of gestation, especially if pregnancy has advanced to its later months, may all be expelled from the uterus. This is most likely when death occurs at or about term or during labor. But all these and other similar indications of the pressure of putrefaction gases are usually encountered when air has ready access to the dead body. With air excluded, putrefaction is delayed or totally checked.

Perfectly preserved human bodies with flexible limbs have been found several hundred years after submersion in fragrant oil and enclosed with the oil in marble sarcophagi hermetically sealed with lead. Similar astounding preservation for long periods has been observed when persons have been accidentally killed by suffocation in melted tar or buried in peat bogs. The preservation of the bodies of mastadons is well known, as is also that of the bones of prehistoric animals found in asphaltum pits. In similar ways the exclusion of air results in greatly delayed putrefaction when bodies remain submerged in cold spring water or the water of mountain lakes. It thus happens that stories get about that such lakes have no bottom, since the bodies never rise to the surface.

Decomposition is retarded by the ordinary wooden burial caskets and it is slower when the burial is deeper. It is still more delayed when the caskets are of metal. The suggestion has been made that in such caskets the moisture released from the body combines chemically with the metals, so that compounds are formed which act as preservatives and postpone putrefaction. We know of no experiments which have been made to determine just what pressure is exerted by the gases of postmortem decomposition, but from the closely associated facts set forth here, the sealing of metallic burial caskets should be of greater importance than their construction to resist pressure and prevent an explosion. In fact, the pressure in them, we would expect, would never be considerable. The question, however, is one easily solved by a little careful experimentation, and for this the dead bodies of animals could be used.

POSSIBLE SYMPTOMS AFTER SWALLOWING WAX CRAYON

To the Editor:—A short time ago I had as a patient a baby, aged 14 months, who had a gastro-intestinal upset, fever and vomiting, and following a dose of castor oil there was found in the stool some fragments of what looked like a red wax crayon. The baby had been playing with a box of crayons and was addicted to putting various articles in its mouth. If the baby did swallow a wax crayon, could this cause such a disturbance? What is the composition of these chemically, and what sort of dye are they colored with?

E. C. MCCULLOCH, M.D., Port Ivory, N. Y.

ANSWER.—The composition of wax crayons, as manufactured for the use of children, varies appreciably among the several manufacturers. The basic material is stearic acid, which is derived from tallow. In addition there may be found, as an ingredient, tallow, beeswax, paraffin, soaps, soapstone, spermaceti, and gum tragacanth. The coloring material may be mineral pigment, aniline dyes, or both. Lamp black, prussian blue, zinc white, chrome yellow, red lead and cinnabar have all been utilized in coloring crayons. Potassium hydroxide, to the extent of 1 per cent, is sometimes incorporated in them.

Red crayons are regarded as more likely to be dangerous than certain other colors, as lead and mercury pigments are sometimes employed. Moreover, the organic red dyes are to be regarded with greater suspicion than some other colors. It is possible that paranitraniline dyes may be employed by some manufacturers.

It is commonly stated that azotized dyes combine best with fats, oil, and oily solvents, which, if true, may lead to their presence in crayons.

In view of the almost universal use of wax crayons by children in their play, and in view of the probability of frequent ingestion of such material by small children, it may become highly desirable to determine precisely that no such crayons contain harmful colors such as cinnabar, red lead, chrome yellow, paranitraniline or other harmful organic substances.

TRANSMISSION OF MALARIA IN TREATMENT OF PARESIS

To the Editor:—In reading Queries and Minor Notes (THE JOURNAL, April 6) I was surprised at the inaccuracy of the answer to the question by E. J. Brown, M.D., of Cleveland, as to the possibility of malaria transmission through injection of patients with paresis. The answer states that experimental work as to this possibility is lacking and that the question cannot be answered until persons with known induced malaria are bitten by known uninfected anopheline mosquitoes and that known uninfected persons are later exposed to the bites of these mosquitoes.

In view of the fact that this is the only method in which malaria has been induced in paretic patients in England for several years, i. e., by transmission by the mosquito of the disease from paretic to paretic; in view of the work done at the Army Medical School by Captain St. John and the work of numerous other investigators throughout the world, it is surprising that so erroneous a statement should be made. Malaria can be transmitted by the mosquito from paretic to uninfected individuals, and this is the only method of treating paretics that has been legally authorized in Great Britain for several years.

I would also call attention to the fact that twelve gametes per cubic millimeter are not necessary to transmit malaria as shown, but that they appear in the blood sometimes as early as the first day of fever, and mosquitoes can be infected when a number less than twelve per cubic millimeter is present, as shown by St. John.

CHARLES F. CRAIG, M.D., Washington, D. C.
Colonel, Medical Corps; Director of Laboratories.

"PROGRESS IN UROLOGY"

To the Editor:—In THE JOURNAL, January 26, p. 336, were listed the most notable achievements in urology within the last ten years. It might be well to add to the list the recognition of the frequency and importance of residual urine in women, notably during convalescence after abdominal and plastic operations.

ARTHUR H. CURTIS, M.D., Chicago.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD OF OPHTHALMIC EXAMINERS: Portland, Ore., July 8, and Philadelphia, Oct. 21. Sec., Dr. William H. Wilder, 122 South Michigan Avenue, Chicago.

ARIZONA: Phoenix, July 2, 1929. Sec., Dr. H. P. Mills, 320 Goodrich Building, Phoenix, Ariz.

CALIFORNIA—Reciprocity: San Francisco and Los Angeles, June 12. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento, Calif.

CONNECTICUT—Basic Science: New Haven, June 8. Address State Board of Healing Arts, 1895 Yale Station, New Haven, Conn.

DELAWARE—Regular and Homeopathic: Wilmington, June 10-12. Sec., Dr. Harold B. Springer, 1013 Washington Street, Wilmington, Del.

GEORGIA: Atlanta and Augusta, June 5-7. Sec., Dr. B. T. Wise, Americus, Ga.

ILLINOIS: Chicago, June 25-28. Supt. of Registration, Mr. V. C. Michels, Springfield, Ill.

INDIANA: Indianapolis, June 25-27. Sec., Dr. E. M. Shanklin, 421 State House, Indianapolis, Ind.

IOWA: Iowa City, June 4-6. Director of Examinations, Mr. H. W. Grefe, Iowa Department of Health, Des Moines, Iowa.

KANSAS: Kansas City, June 18, 1929. Sec., Dr. Albert S. Ross, Sabetha, Kan.

KENTUCKY: Louisville, June 11-13. Sec., Dr. A. T. McCormack, 532 W. Main Street, Louisville, Ky.

LOUISIANA: New Orleans, June 13-15. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Building, New Orleans, La.

MARYLAND: Baltimore, June 18-21. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral Street, Baltimore, Md.

MARYLAND—Homeopathic: Baltimore, June 11. Sec., Dr. J. S. Garrison, 517 Old Orchard Road, Ten Hills, Baltimore, Md.

MICHIGAN: Ann Arbor, June 11-13. Detroit, June 19-21. Sec., Dr. Guy L. Connor, 707-708 Stroh Building, Detroit, Mich.

MISSOURI: St. Louis, June 12-14. Sec., Dr. James Stewart, Capitol Building, Jefferson City, Mo.

NEBRASKA: Omaha, June 10-12. Chief, Mrs. Clark Perkins, Bureau of Examining Boards, Lincoln, Neb.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. Charles B. Kelley, 1101 Trenton Trust Building, Trenton, N. J.

NEW YORK: New York, Albany, Syracuse and Buffalo, June 24-27. Chief, Mr. Herbert J. Hamilton, Educational Building, Albany, N. Y.

NORTH CAROLINA: Raleigh, June 24. Sec., Dr. John W. MacConnell, Davidson, N. C.

NORTH DAKOTA: Grand Forks, July 2-5, 1929. Sec., Dr. G. M. Williamson, Grand Forks, N. D.

OHIO: Columbus, June 3-6. Sec., Dr. H. M. Platter, 85 East Gay Street, Columbus, Ohio.

OREGON: Portland, July 1-3, 1929. Sec., Dr. Joseph F. Wood, Suite 510-512 Selling Building, Portland, Ore.

SOUTH CAROLINA: Columbia, June 25. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia, S. C.

TENNESSEE: Memphis, Nashville and Knoxville, June 14-15. Sec., Dr. Alfred B. DeLoach, Medical Arts Building, Memphis, Tenn.

TEXAS: Austin, June 18-20. Sec., Dr. T. J. Crowe, 918-919 Mercantile Bank Building, Dallas, Texas.

VERMONT: Burlington, June 19-21. Sec., Dr. W. Scott Nay, Underhill, Vt.

VIRGINIA: Richmond, June 18-21. Sec., Dr. J. W. Preston, 720 Shenandoah Life Building, Roanoke, Va.

WISCONSIN—Basic Science: Milwaukee, June 24. Sec., Prof. Robert N. Bauer, 3410 Wisconsin Ave., Milwaukee, Wis.

WISCONSIN: Madison, June 25-27. Sec., Dr. Robert E. Flynn, 315 State Bank Building, LaCrosse, Wis.

Pennsylvania January Examination

Mr. Charles D. Koch, director of the Pennsylvania Professional Bureau, Department of Public Instruction, reports the written and practical examination held at Philadelphia and Pittsburgh, Jan. 8-10, 1929. Of the 53 candidates examined, 51 passed and 2 failed. Two physicians were licensed through reciprocity with other states and 4 by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Univ. of Colorado School of Medicine		(1927-1)	1
Georgetown Univ. School of Medicine		(1927-1)	1
Chicago Coll. of Medicine and Surgery		(1917-1)	1
Johns Hopkins Univ. School of Medicine		(1926-1)	1
Atlantic Medical College, Baltimore		(1897-1)	1
Harvard Univ. Medical School		(1926-1)	1
Tufts College Med. School		(1914-1) (1920-1) (1927-1)	3
Univ. of Minnesota Medical School		(1927-1)	1
Univ. of Nebraska College of Medicine		(1926-1)	1
Univ. of Penn. School of Med.		(1925-1) (1926-4) (1927-9)	14
Jefferson Med. Coll. of Philadelphia		(1926-3) (1927-7)	10
Woman's Med. Coll. of Pennsylvania		(1927-1)	1
Hahnemann Med. Coll. and Hosp. of Phila., Homeo.		(1927-3)	3
Univ. of Pittsburgh School of Medicine		(1927-1)	1
Temple Univ. School of Medicine		(1927-8)	8
Univ. of Virginia Dept. of Medicine		(1927-1)	1
Queen's Univ. Faculty of Medicine		(1918-1)	1
McGill Univ. Faculty of Medicine		(1927-1)	1

College	FAILED	Year Grad.	
National Univ. of Arts and Sciences Med. Dept., St. Louis *		(1911-1)	1
Univ. of Modena, Italy		(1925-1)†	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Univ. of Colorado School of Medicine		(1904)	W. Virginia
Jefferson Medical College of Philadelphia		(1926)	Dist. Colum.

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement with
Univ. of Maryland School of Medicine and the College of Physicians and Surgeons		(1927)	N. B. M. Ex.
Univ. of Pennsylvania School of Medicine		(1924), (1926) (2)	N. B. M. Ex.

* This institution was involved in the Missouri diploma mill scandal of 1923-1925.

† Verification of graduation in process.

Book Notices

RESEARCHES IN POLYNESIA AND MELANESIA. An Account of Investigations in Samoa, Tonga, the Ellice Group, and the New Hebrides, in 1924, 1925. Parts V-VII (Relating to Human Diseases and Welfare). By Patrick A. Buxton, M.R.C.S., D.T.M. & H., Director, Department of Medical Entomology, London School of Hygiene and Tropical Medicine. Cloth. Price, 9/-. Pp. 139, with illustrations. London: London School of Hygiene and Tropical Medicine, 1928.

This book deals chiefly with studies in filariasis. The author accounts for the occurrence of nonperiodic filaria larvae in Fiji and in Polynesia by supposing that the ancestors of the Fijians and Polynesians traveled eastward from Asia, leaving the geographic area of the vector of typical *Filaria bancrofti* (the larva of which is nocturnal) and came into the islands with a small number of mosquitoes, one of these species which bites in subdued daylight becoming the vector; in this way selection broke down the nocturnal periodicity of the micro-filaria. Other diseases are dealt with more briefly. The author's observations are described in a clear and interesting manner, and his conclusions—for example, with respect to the prevalence of tuberculosis—are conservatively stated. The book contains many real contributions to the study of tropical diseases.

THE KAHN TEST. A Practical Guide. By R. L. Kahn, M.S., Sc.D. Cloth. Price, $4. Pp. 201, with illustrations. Baltimore: Williams & Wilkins Company, 1928.

"The purpose of this volume is to present a brief summary of the precipitation phenomenon in syphilis and a detailed discussion of the technical aspects of the Kahn test." It is to be regarded as an elaboration or a second edition of the section on procedure in "The Serum Diagnosis of Syphilis by Precipitation." The work is divided into nine chapters, the first dealing with the phenomenon of precipitation in syphilis with reference to the Kahn reaction, in which the author correlates the principles governing precipitation in syphilis with the general principles controlling precipitation in colloidal systems. The other eight chapters deal with the purely technical phases of the test and are clearly and concisely presented. Although intended primarily for laboratory workers, this book should prove of interest and value to the physician, who should have a firm basis for his clinical interpretation of the results of the test.

SOZIALHYGIENE IM SÄUGLINGS- UND KLEINKINDESALTER. Von Eugen Stransky, Assistent der Reichsanstalt für Mutter- und Säuglingsfürsorge in Wien. Mit einem Vorwort von Hofrat Prof. Dr. Leopold Moll, Direktor der Reichsanstalt für Mutter- und Säuglingsfürsorge in Wien. Paper. Price, 8 marks. Pp. 129, with 6 illustrations. Vienna: Franz Deuticke, 1929.

In this thoughtful and conveniently arranged volume, the author surveys briefly and concisely the problems of morbidity and mortality in the various periods of childhood. He also gives an account of the valuable prophylactic measures that may be employed to minimize the toll of sickness and death during the early period of life. In the first division of the book he treats of the new-born period and considers in some detail the various diseases and accidents common to this period of life. Among other things he points out that neonatal mortality cannot be influenced by efforts of infant welfare organizations and comes to the conclusion, which is generally accepted throughout the civilized world, that on account of improvement in general hygiene and of the better protection afforded to older infants,

the mortality is diminished but the death rate among the newborn remains stationary. He sees from this that further reduction of infant mortality can be accomplished only by protecting the pregnant woman, by proper prenatal care, by adequate nursing and care of the new-born, and by better training for midwives and obstetricians. He thinks that, if pregnant women are confined in well conducted hospitals and if infants come under the care of competent pediatricians during the first days of life, the neonatal mortality may be reduced. In another chapter he considers similar problems occurring during the infantile period. The infant mortality has diminished in all those countries where general advance has been made in social hygiene. The advances in knowledge concerning nutrition of infants and the breast-milk propaganda which has been advocated throughout the civilized world have reduced significantly the mortality from diarrheal diseases. The mortality from the respiratory and acute infectious diseases has also been reduced, but not to the same degree as in the case of the nutritional disorders. He again emphasizes that the most important element in infant mortality prevails during the first period of life; nevertheless the attack on this phase of the problem is difficult, though not impossible. The author asks what the effect of the complete abolition of infant mortality would be on natural selection and concludes that an infant mortality of 30 per thousand instead of 100 per thousand, as it now is in Germany and Austria, would give sufficient opportunity for natural selection to dispose of the unfit. It seems, however, that one cannot so easily dispose of the process of natural selection and the survival of the unfit. Even if the mortality were reduced to 30 per thousand, who can tell whether the unfit might not still survive, and those who are fittest and most valuable to the human race perish? This problem cannot be simplified so that it can be solved by simple arithmetic. He also presents a thoughtful account of the effect of hospitalization on infants and the injuries resulting from institutional life on their growth and development. The closing chapter is devoted to a consideration of the infectious contagious diseases of the runabout and the school-age periods. Considerable attention is given tuberculosis, its prevalence, its association with other diseases and its prophylaxis. Stransky deserves credit for having collected a series of valuable facts and for having presented them in a concise manner. The book is an excellent guide to those who are interested in the administration of practical problems relating to infant and child hygiene.

LECTURES IN PSYCHIATRY. (THE MAJOR PSYCHOSES). By William A. White, A.M., M.D. Nervous and Mental Disease Monograph Series, No. 51. Boards. Price, $3. Pp. 167, with illustrations. Washington: Nervous & Mental Disease Publishing Company, 1928.

The twelve lectures presented in this volume are apparently a verbatim report of a course of lectures given to a class of undergraduate students. In his introduction, Dr. White stresses the arrangement of the lectures, which he has found from long experience affords a steplike progression from the more simple to the more complex types of mental disease. Beginning with situational reactions, the mechanisms of the development of which are readily understood, he passes to paresis and mental deficiency as examples of structural defect and then to epilepsy, the manic-depressive psychoses, including involutional melancholia, paranoia and finally dementia praecox. The lectures are illustrated with reports of cases, which are used as the basis for the comments on mechanisms and their meaning. The purpose has been to give the student some insight into the nature of the material with which the psychiatrist works and expressly not with the idea that the book is a textbook of psychiatry. The author has succeeded admirably in his purpose and the book can be recommended without hesitation to the medical student, the nurse or the social worker who desires to know something of the elements of this specialty.

HANDBUCH DER SOZIALEN HYGIENE UND GESUNDHEITSFÜRSORGE. Herausgegeben von A. Gottstein, A. Schlossmann und L. Teleky. Band VI: Krankenhaus-, Rettungs-, Bäderwesen. Sozialhygienische Bedeutung der Sozialversicherung. Berufsberatung Gesundheit und Wirtschaft. Von F. Appelius, E. Aschenheim, E. Dietrich, usw, usw. Paper. Price, 48 marks. Pp. 600, with 70 illustrations. Berlin: Julius Springer, 1927.

The sixth and concluding volume of this encyclopedic undertaking is generally up to the high standards of its predecessors, although the subjects dealt with do not on the whole have so wide an interest as those in the earlier volumes. Many social workers will turn first to the articles by Gottstein on hospital organization and management and by Goldman on homes for the aged and infirm. The latter author estimates that, in 1940, 13 per cent of the German population will be above 60 years old, with an even higher proportion in the large cities. Two other articles deserve especial mention: one by Pryll dealing with the general and physical considerations that bear on the choice of an occupation; the other by Poppelreuter treating of the psychologic factors involved. Both are excellent. Pryll's article is accompanied by an exhaustive bibliography.

SPINAL ANESTHESIA [SUBARACHNOID RADICULAR CONDUCTION BLOCK]: PRINCIPLES AND TECHNIQUE. By Charles H. Evans, M.D., Clinical Assistant, N. Y. Post-Graduate Medical School and Hospital. Introduction by W. Wayne Babcock, M.D., F.A.C.S. Foreword by Charles Gordon Heyd, M.D., F.A.C.S. Cloth. Price, $5.50 net. Pp. 203, with 41 illustrations. New York: Paul B. Hoeber, Inc., 1929.

The author has attempted to bring the present knowledge of spinal anesthesia into a concise form and to standardize a satisfactory technic. If correctly induced and the patient properly selected, spinal anesthesia is usually ideal for most operations below the umbilicus and in certain instances in the upper part of the abdomen. Indications and details are given in this book, including methods of limiting the anesthesia to the lower part of the abdomen or the lower extremities. Various drugs are discussed, including those of lighter specific gravity than the spinal fluid, but the author objects to their use because of the necessity of a measured Trendelenburg position. He advises the use of one of the pure procaine preparations which are put up in ampules. The routine intramuscular injection of epinephrine solution is used in preference to ephedrine for maintaining a normal blood pressure. However, some other surgeons with equal experience prefer the latter. The phenomena accompanying anesthesia based on the anatomy and physiology of the nervous system are described in a complete manner. Possible complications with methods of prevention or treatment are explained. The author shows that, properly given and controlled, spinal anesthesia is not only safe but is frequently the anesthesia of choice. It produces usually a most desirable anesthesia and may be indicated in operations below the umbilicus not within the scope of local and regional methods.

CAUSES ET TRAITEMENTS DES RHUMATISMES CHRONIQUES. Par R. J. Weissenbach, médecin des Hôpitaux de Paris, et F. Françon, médecin consultant aux Eaux d'Aix-les-Bains. Paper. Price, 32 francs. Pp. 342. Paris: Gaston Doin & Cie, 1928.

This little work appears at a time when attention is being turned in increasing measure to the problem presented by arthritic and rheumatoid disabilities. Insurance of the working classes, especially in Europe, has emphasized the economic importance of reducing incapacity from these causes; therefore any serious publication that seeks to extend knowledge or throw additional light on the subject should be evaluated. Of the many books written on this subject, few have aspired to much more than clinical considerations. The present work does not wholly escape being in the same category. It represents, nevertheless, an open-minded presentation of the etiologic and clinical features of the disease, and especially the forms of treatment which the authors believe applicable to the many varieties of the syndrome discussed. The work as a whole is better worth perusal than cursory inspection would suggest. It is characterized by the somewhat elaborate clinical classifications long common to French medicine and is therefore in contrast with the tendency in this country to reduce rheumatoid and arthritic disabilities to two main types. The authors, however, have made a sincere attempt to ascertain and to consider the important known facts and principles underlying the problem and have brought to bear an unusually wide familiarity with the literature of the subject, in English and German as well as in French. Regarded merely as a compilation of the views of many workers, the book has value to students of this field, although many bibliographic references are apparently intentionally omitted. Perhaps the most important aspect of this book from the standpoint of American readers is the angle of vision which the authors subtend toward the problem as a whole, representing in this the continental and also largely the English point of view. They have not hesitated to express their own experiences and convictions. While acknowledging the many contributions, of

America especially, to the doctrine of focal infection, the authors also develop other factors which they regard as influencing arthritis or rheumatism. The amount of information available in this connection will come somewhat as a surprise to many readers and deserves consideration. The book will serve as a fair compendium of current literature; but with a little more effort at completeness, including discussion of the gross and microscopic pathology of arthritis, it could have filled a larger rôle. The work is in line with the tendency of the day toward a more thorough study and exposition of the field of arthritis, and will be found informing and stimulating in the wealth of clinical and other considerations which it presents. The absence of an index is to be regretted.

IMPERATIVE TRAUMATIC SURGERY WITH SPECIAL REFERENCE TO AFTER-CARE AND PROGNOSIS. By C. R. G. Forrester, M.D., F.A.C.S., Consultant, Teaching Staff, Illinois Post-Graduate School. Cloth. Price, $10 net. Pp. 464, with 598 illustrations. New York: Paul B. Hoeber, Inc., 1929.

This volume is devoted to the treatment of skeletal injuries, with a brief chapter on the surgical and nonsurgical treatment of peripheral nerve injuries. It is a precise detailed description, beautifully illustrated, of the author's method of handling the various bone injuries. A large experience in treating fractures and dislocations occurring in workmen, colored by the author's extensive experience with the English orthopedic units during the war under the direction of Sir Robert Jones and others, has given the author an authoritative opinion on the proper routine treatment of the results of mechanical trauma. The particular value of this work to the industrial surgeon, in addition to the simple description of a routine method for dealing with the various fractures, is detail given to the estimation of the length of disability from work which should be expected for specific injuries and their complications, and the estimation of the amount of permanent loss of function. Exact directions are supplied as to the time when physical treatment should be instituted and its nature. A surgically sane view as to the indications for open operations in the various bone injuries is always maintained. The author is generally conservative. He is inclined to recommend wrenching stiff shoulder joints and backs under certain conditions; he generally employs Steinman pins rather than calipers; for osteomyelitis he follows Morison's technic of injecting bismuth iodoform petrolatum paste and Beck's paste.

CHIRURGIE DES VOIES BILIAIRES: SPIRO-CHOLÉCYSTOSTOMIE. Par C. Sobre-Casas, chef du service de gynécologie de l'Hôpital Torcuato de Alvéar (Buenos-Aires). Préface du Pr. J.-L. Faure. Paper. Price, 35 francs. Pp. 119, with 33 illustrations. Paris: Masson & Cie, 1928.

This small volume deals entirely with the operative technic of cholecystostomy, cholecystectomy and choledochotomy. The text is brief, the book being composed almost entirely of colored plates. There is an anatomic introduction dealing with anomalies of the extrahepatic ducts, and the cystic and hepatic arteries. The technic described is for the most part illogical, including, first, the removal of the mucosa of the gallbladder as a substitute for cholecystectomy; secondly, partial resection of the wall of the viscus; thirdly, marsupialization, a procedure to be used only for carcinoma or insurmountable obstruction of the common duct from other causes. The coloring used in the plates is bizarre and unreal. This work cannot be considered a worth-while contribution to the literature of the bile tracts.

STUDIES IN PSYCHOLOGY: MEMORY, EMOTION, CONSCIOUSNESS, SLEEP, DREAMS AND ALLIED MENTAL PHENOMENA. By William Elder, M.D., F.R.C.P.E., F.R.S.E., Consulting Physician to Leith Hospital. Cloth. Price, 8/6 net. Pp. 212. London: William Heinemann, Ltd., 1927.

As stated in the preface, psychology is here approached from its neurologic aspects and an effort is made consistently to suggest what actually takes place in the neuronic structure of the nervous system and to view behavior in terms of responses to stimulation. While, perhaps, these references do not add greatly to understanding the dynamics of behavior and its manifestations, they do serve to emphasize the need of using physiologic and biologic knowledge as a check on purely speculative phraseology, which can readily come to be regarded as fact. This is well illustrated in the final chapters that deal with symbolisms, dreams and the freudian and other psychoanalytic interpretations. To a large extent the subject matter of the studies consists of a formal psychology, including such subjects as memory, emotion, instincts, habits and consciousness, and does not deal with a really dynamic psychology through which one can gain some insight into the meaning of behavior. Nevertheless, it will serve to present a readable foundation for studies in this more comprehensive field.

E. STIERLIN'S KLINISCHE RÖNTGENDIAGNOSTIK DES VERDAUUNGSKANALS. Von Dr. H. Chaoul, a. o. Professor an der Universität Berlin. Mit einem Geleitwort von Ferdinand Sauerbruch. Second edition. Paper. Price, 84 marks. Pp. 642, with 893 illustrations. Berlin: Julius Springer, 1928.

Dr. Chaoul has brought the work of Dr. Stierlin down to date and presents in this volume a complete study of roentgen diagnosis of the gastro-intestinal tract. A review of historical facts and the development of the various methods in use is given in the first three chapters. The book is as much an atlas as it is a description of the technic and interpretation. It cannot be said that the book brings out anything essentially new. The manner of presentation is such that everything stated is clear, definite and well illustrated. The views of other investigators are quoted profusely. Interpretation of roentgen films may vary with different observers and the extent of one's experience. Thus, when Chaoul asserts that chronic gastritis can be diagnosed by plate examination, many will agree whereas others will not agree; similarly with the diagnosis of ulcer and cancer of the stomach as indicated by the character of the niche. The author states that such differentiation is not difficult. Still the frequency with which difficulties arise in such a differentiation, at times even at operation, would seem to disprove the assertion. The author calls attention to the importance of an incisura without a niche as possibly indicating a flat ulcer. The subject of duodenal stenosis is not stressed as much as one would expect from the frequency with which it is being discussed in American literature. Duodenal ulcer and the importance of the niche are well emphasized. The last chapter deals with the rôle of the position and form of the rugae of the stomach as aids in the diagnosis of gastric conditions. The author believes that much aid in diagnosis can be obtained with the use of a special barium mucilage mixture. The volume is profusely illustrated and is well worth having.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

COMPILATION OF DIETS. By the California State Dietetic Association. Second edition. Leather. Price, $5. Pp. 77. Gardena, California: Spanish American Institute Press, 1929.

Loose sheets in a standard cover listing generally accepted diets for a variety of diseases in which special diets are desirable.

HANDBUCH DER PATHOGENEN MIKROORGANISMEN. Herausgegeben von W. Kolle, R. Kraus, und P. Uhlenhuth. Lieferung 28. Band VI. Trichinose. Von Prof. Dr. O. Seifert. Filariosen des Menschen. Von Prof. Dr. med. et phil. nat. h. c. F. Fülleborn. Echinokokkenkrankheit. Von Dr. G. Blumenthal. Third edition. Paper. Price, 33 marks. Pp. 995-1290, with 93 illustrations. Jena. Gustav Fischer, 1929.

CHILD WORKERS ON CITY STREETS. By Nettie P. McGill. U. S. Department of Labor, Children's Bureau, Bureau Publication No. 188. Paper. Price, 15 cents. Pp. 74, with illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1928.

FIVE YEARS IN FARGO. Report of the Commonwealth Fund Child Health Demonstration in Fargo, North Dakota. Cloth. Pp. 207, with illustrations. New York: Commonwealth Fund Division of Publications, 1929.

REPORT OF THE STATE DEPARTMENT OF HEALTH OF IOWA FOR THE BIENNIAL PERIOD ENDING JUNE 30, 1928. Cloth. Pp. 126, with illustrations. Des Moines, 1928.

BIENNIAL REPORT FOR 1927 AND 1928 OF THE COMMITTEE ON MATERNAL HEALTH. "Medical Aspects of Human Fertility." Paper. Pp. 32. New York, 1928.

REPORT OF THE MEDICAL RESEARCH COUNCIL FOR THE YEAR 1927-1928. Paper. Price, 3s. net. Pp. 165. London: His Majesty's Stationery Office, 1929.

INTERNATIONALE HYGIENE AUSSTELLUNG DRESDEN, 1930. Paper. Pp. 29. Dresden: Internationale Hygiene-Ausstellung, 1929.

Miscellany

ENCEPHALITIS LETHARGICA AND ENCÉPHALOMYÉLITE SUBAIGUË DIFFUSE OF CRUCHET *

PROF. CONSTANTIN VON ECONOMO

VIENNA

On the basis of a small epidemic which visited Vienna at the end of 1916 and beginning of 1917, I defined the disease entity of encephalitis lethargica and read a paper on the subject before the Vienna Society of Psychiatry and Neurology, April 17, 1927. By means of the demonstration of patients and anatomic preparations with typical evidences of the disease, and also by means of the successful transmission of the disease to apes, which I later carried out with von Wiesner, it was possible to define this entity as a disease *sui generis* and to distinguish it clinically and anatomically from the so-called grip encephalitis of the hemorrhagic type. As early as this first communication I was also able to state that it was historically probable that this new disease was identical with the "nona" of former times (1891) and with the sleeping sickness of Tübingen (1712). As a result of my communication the new disease entity gained rapid and general recognition. Later it became known that Urechia had observed cases in the spring of 1915 in Roumania and Cruchet in the autumn of the same year on the French front at Verdun, which afterward were identified with great probability as lethargic encephalitis.

In 1928 Cruchet [1] published a monograph entitled "Encéphalomyélite épidémique," in which the forty cases which he originally observed in collaboration with Calmette and Moutier were increased by twenty further cases. Originally, Cruchet called the disease encéphalomyélite (subaiguë) diffuse. Among the cases were those associated with mental disturbances, convulsive phenomena and choreatic, meningitic, hemiplegic, pontocerebellar, bulbar, poliomyelitic and polyneuritic forms. Although the clinical presentation of the material leaves much to be desired, there are nevertheless a number of cases reported which would doubtless be diagnosed as encephalitis lethargica according to our present knowledge. It is this circumstance, also, which constitutes the chief interest of this little book of 138 pages, precisely because it gives evidence of the early appearance of this disease. One finds that the earliest case (case 4, which was not observed by the author) dates from January, 1915; i. e., almost from the very beginning of the war and at least three and one-half years before the beginning of the grip epidemic. From this it may be concluded that the probably ever present sporadic cases of lethargic encephalitis developed to an epidemic by virtue of the great massing of populations during the war, which afforded the possibility of repeated human passage and consequent increase in virulence. Conversely, lethargic encephalitis also gained a new increase in virulence later during the grip epidemic. This corroboration of the early incidence of the disease is thus of the greatest importance for the understanding of the pathogenesis of lethargic encephalitis, although, indeed, Cruchet pays very little attention to these interesting details. On the other hand, he claims for himself priority in the discovery of lethargic encephalitis by virtue of the circumstance that he sent a communication to the Société médicale des Hôpitaux de Paris, which appeared in the bulletin of that society, April 27, 1917. His claim rests on the fact that he sent the paper from Bar-le-Duc, April 1. In this respect I should like to make the following points clear:

1. It is generally agreed, because of easily understandable and practical reasons, the priority goes according to the date of publication, the publication being either the public print or a public communication or lecture. Cruchet's publication is dated April 27, whereas I [2] gave an announced and public lecture ten days earlier (April 17) before the Vienna Society of Psychiatry and Neurology under the title of "Encephalitis Lethargica." There can thus be no doubt as to the date of priority. If, however, Cruchet makes exception to claim priority on the basis of the date when he mailed his communication, i. e., April 1, then I can quite as justly point out that the date of my announcing my lecture to the society must have been in March, 1917, since the society meets only once each month.

2. Although, contrary to Cruchet's assertion, my priority in this matter is thus unquestionably assured by date, I lay very little store by the date alone, since it is manifestly governed by a multitude of external circumstances. It is also my opinion that, in such a matter, the definite date when some one first expressed a vague idea as to the relationship of some peculiar cases is of little importance. Medical science cannot consider it a valuable increase of its store of knowledge when some one suspects a certain similarity between some cases and expresses this notion to others as Cruchet, when he says, "One is struck with a certain family air" (on est frappé d'un certain air de famille). Such observations and guesses are truly very common in every clinic and they can just as well turn out to be false as accidentally right. Only when the supposition of the presence of a new disease entity can be clearly proved beyond a doubt by means of clinical, pathologic, anatomic, bacteriologic and other observations and, in the case of epidemics, also by the epidemic character of the disease, can it be said that medical science has been definitely enriched. But this is precisely what Cruchet has failed to do, as can easily be seen in the present publication of the material he observed at that time.

(*a*) Were we not in possession of the present exhaustive knowledge of encephalitis lethargica, Cruchet's clinical descriptions would not be convincing enough to make possible a differentiation of his cases from syphilis, tumor or hemiplegia, and especially not from other forms of encephalitis. Although there are some typical cases of lethargic encephalitis among his patients, he does not at all stress, among the large number of symptoms mentioned, the typical symptoms of encephalitis lethargica referable to the midbrain and its vicinity in the brain stem, around which all the varieties of this disease are secondarily grouped. Either Cruchet did not notice them or they were not present and, in the latter case, the majority of his cases then probably were not cases of lethargic encephalitis. It is thus not at all surprising that Cruchet's immediate colleagues and even some of his French fellow scientists did not know what to do with these vague descriptions and guesses and that in nearby England the later incidence of the disease was even looked on as food or gas poisoning, until Netter's mention of my work called attention to lethargic encephalitis. It was also through Netter's attitude that the disease was so called in those countries.

(*b*) Cruchet also failed to clarify the pathologic and anatomic observations which alone enabled me in my first lecture, April 17, 1917, to prove the individuality of this disease beyond any doubt. The picture of inflammation in the gray substance, especially in the gray substance of the midbrain, with vascular infiltration, ring hemorrhages, tissue infiltration and ganglion cell disease, is indeed not pathognomonic, but it is typical and to this day nothing essentially new has been added to the anatomic data I presented in that first paper. According to Cruchet himself (p. 112), it was not until 1919 that the pathologic observations in one of his cases was published. This doubtless proves the identity of one (but by no means the majority) of his cases with the definite picture of lethargic encephalitis which I described, but it occurred afterward and certainly did not serve as a basis for setting up a new disease entity as should have

* Translated by Sam Parker, M.D., New York.

1. Cruchet: Encéphalomyélite épidémique, Paris, Doin & Cie, 1928.

2. Von Economo, C.: Encephalitis lethargica, Jahrb. f. Psychiat. u. Neurol. **39**: 202, 1917.

been the case. Yet Cruchet, without this anatomic basis, made the further mistake of calling the disease encéphalomyélite diffuse, although the inflammation is not at all diffuse, but focal, localized particularly in the midbrain and affecting the gray substance almost exclusively.

(*c*) The experimental proof of the infectious nature of the disease was also not established by Cruchet, for, as he himself states (p. 153), he never carried his work further than a few negative attempts at inoculating guinea-pigs, whereas I was able, in collaboration with von Wiesner, to demonstrate the infectiousness of the disease experimentally in apes during the first weeks of 1917.

(*d*) The content of this last publication of Cruchet's also makes it appear that the truly epidemic character of this disease was not clear to him. For, while lethargic encephalitis is primarily an epidemic disease (as can even be concluded from the incidence of Cruchet's own cases, forty-seven out of sixty having come under observation in the autumn and winter), Cruchet seems to have missed this and writes (p. 21), "One would not encounter, indeed, the frankly epidemic character" (on ne rencontrait pas en effet le caractère nettement épidémique). Following on this failure to observe the epidemic nature of lethargic encephalitis, it is almost an irony of himself to see Cruchet now entitling his book "Encéphalite épidémique" in order, understandably enough, to circumvent the name that I gave the disease.

(*e*) I must further call attention to one more serious error. Seizing on the name that I gave to the disease, Cruchet again attempts, as others have already done before him, to make it seem as if I had described only the somnolent forms of this disease. I prefer to pardon this error by supposing that Cruchet never read any of my publications, for such a fable is quickly dispelled by an examination of the material of my first communication, only seven of the thirteen cases first presented having been of the somnolent form, the other six having exhibited other symptoms of this protean disease but no somnolence.

If, then, priority in the time of publication cannot go to Cruchet in this matter, it is even more certain—and this is the chief thing—that he can claim absolutely no priority in having recognized the essential nature of lethargic encephalitis. In view of the fact that Cruchet had the good fortune to observe such cases about one and one-half years (1915) before I did, it is not surprising that these facts cause him irritation. Today we know of a number of types of encephalitis which occur epidemically but which are nevertheless not identical with the lethargic encephalitis I described. Such epidemics are, for example, the encephalitis pontis et cerebelli of Redlich, the encephalitis migrains of Albrecht and the Japanese epidemics of encephalitis. In view of Cruchet's indefinite clinical descriptions and his complete lack of anatomic and experimental proofs, it is at present impossible to judge what manner of material he accidentally dumped together, with perhaps a few cases of genuine epidemic lethargic encephalitis. The history of encephalitis lethargica must nevertheless be thankful to Cruchet for this interesting publication, since it enables us once and for all to disclose his hitherto vague and indefinite claims to priority in its first description as quite unfounded, as to both time and matter.

Wrist Fracture.—Fractures and dislocations of the carpal bones, especially the scaphoid and semilunar, are not uncommon. It should be remembered that a fracture of either of the above carpal bones will produce the same limitation of motion as a fracture of the base of the radius, when that is associated with a displacement of the lower fragment. This is due to the fact that the radius, scaphoid and semilunar are the three bones which form the articulation of the wrist. A change in the axis of one of the articular surfaces will limit motion.—Cohn, Isidore: Contusions and Sprains, *Northwest Med.*, March, 1929.

Medicolegal

Standard of Skill of Sectarian Practitioners

(Nelson v. Dahl (Minn.), 219 N. W. 941)

The plaintiff, as administrator of the estate of Clara Anderson, sued the defendant, a licensed chiropractor, for malpractice. The plaintiff's intestate had a weak heart and a goiter, and suffered from headaches. The defendant "analyzed" her spine and found "misalinements" of the vertebrae. He undertook to get the supposedly misalined vertebrae back into normal position, "so that abnormal pressure on the nerves would be removed, with the idea that nature would take care of the rest." Jan. 19, 1926, the patient was suffering from a severe headache and was vomiting. The defendant palpated her spine and claimed to have adjusted it. The patient seemed relieved, but she soon went into a convulsion, and in the course of the evening she died. An "allopathic doctor" testified that she died from "heart failure, caused by toxemia, i. e., poison coming into the blood from the goiter," but he disclaimed all knowledge of chiropractic. He was not permitted to give an opinion as to the effect of manipulations or adjustments of the spine. After a decision in the trial court in favor of the chiropractic defendant, the plaintiff made a motion for a new trial, and from an order denying that motion he appealed to the supreme court of Minnesota. The plaintiff stressed the failure of the defendant to recognize the presence of diseases by their symptoms. But, said the court,

> The school of the chiropractors seems to limit its field of operation to the spine and to making the abnormal normal. It would seem that such could seldom have harmful consequences. Those engaged in chiropractic treatments must, of course, have regard to the presence of such ailments as might be aggravated by adjustments of the spine—if such adjustments do in fact aggravate any ailments.

A physician is required to exercise only such reasonable care and skill as is usually exercised by physicians in good standing in the same school of practice. When a patient selects a physician belonging to one of the "several recognized schools of treatment," he thereby adopts and accepts the kind of treatment common to that school. The care, skill and diligence with which he is treated, when that becomes a question in the courts of Minnesota, must be tested by the evidence of those who are trained and skilled in that particular school of treatment. The order of the court below denying a motion for a new trial was affirmed.

A Gallstone Operation in the Office

(Hamilton v. Kelsey (Ore.), 268 P. 750)

This case arose out of an operation for gallstones by the defendant, Kelsey, in his office. The plaintiff, Hamilton, suffered severe pains in the right side of her abdomen for two or three days before she consulted the defendant. He, it was alleged, told her that she had gallstones, caused roentgenograms to be made, and gave her some medicine in the hope of dissolving the stones. According to the record, the defendant told the plaintiff that a surgical operation to remove gallstones was not serious and that it could be readily performed in his office under the influence of a local anesthetic. He began the operation about 8 a. m., June 3, under a local anesthetic. It became necessary, however, to administer ether to complete the operation. After the incision had been made and before the plaintiff went under the influence of the ether, she twice heard the defendant say to a nurse who was assisting him that there was "nothing in there." The patient was removed to her home in an ambulance about 5 or 6 p. m. Two days later, fecal matter oozed out of the incision. The defendant explained to the patient that this was probably due to a rent in the colon made by something sharp that the plaintiff had swallowed. He prescribed a course of treatment, but, as the plaintiff's condition did not improve, another physician was summoned. Treatment failed to heal the wound, and the patient was therefore operated on, August 6. The transverse colon was adherent to the wound, and in the colon there was an opening from 1½ to 2 inches long. The rent was closed, the incision healed, and the patient recovered her health.

The defendant testified that he did not operate for gallstones but to lance an abscess; that the abscess had its origin in the colon and was working through to the outer surface of the abdomen; that lancing an abscess was a simple matter, and that when he opened the abscess fecal matter came through. No evidence of an abscess was found, however, by the operating surgeon, who testified that in his opinion the rent could be due to no cause other than to the fact that a stitch was put through the colon and was drawn up to the incision, and that in a day or two the stitch slipped out and the fecal matter escaped; he had never observed or known of an abscess forming on the transverse colon, attaching itself to the abdominal wall, and then working through the wall into the muscles and to the outer surface, as claimed by the defendant. On behalf of the plaintiff, evidence was offered to show that to perform an operation for gallstones in a physician's office was not in conformity with the rules of practice followed in Portland and similar communities and that an endeavor to operate in such an office as the defendant possessed would be very likely to produce an unfavorable result. In reviewing the evidence, the supreme court of Oregon commented on the fact that although the defendant denied that he undertook the operation to remove gallstones and testified that he lanced an abscess, he did not disclose his alleged purpose to the plaintiff or her family before proceeding. The court assumed, therefore, that the operation was undertaken by the defendant for the purpose of removing gallstones. To use an office of the kind possessed by the defendant as a place for an operation for the removal of gallstones was to fail to meet the standard of professional service generally rendered in the city of Portland and similar communities. Such an operation is a major operation, and the use of an office under such circumstances would be likely to produce the unfavorable result which followed the defendant's services. The judgment of the court below in favor of the plaintiff was affirmed.

Abandoning Sponge in Operation Wound Justifiable

(Rayburn v. Day (Ore.), 268 P. 1002)

The plaintiff, a woman, aged 43, was operated on by the defendant, July 14, 1925. A second operation was performed, Aug. 17, 1925, at which a sponge was removed from the abdomen. The patient sued, but judgment was given for the defendant. The plaintiff thereupon appealed to the supreme court of Oregon. She alleged that the sponge that was allowed to remain in the abdomen was the source of the ill health that made the second operation necessary. The defendant contended, however, that the second operation was the result of the original pelvic infection; that that infection caused the formation of a secondary abscess, for the relief of which the second operation was done. He admitted that he left a surgical sponge in the abdomen, but averred that it was sterile and caused no ill effects, and was not the cause of the second operation.

When the defendant testified to the routine procedure adopted between himself and his assistants in the handling of sponges, he said: "It is not my business to keep track of the sponges; still, in working along with the patient, I always keep an idea." The plaintiff moved to strike out this statement, but the motion was denied. The supreme court assumed, however, that the plaintiff's testimony was intended only to delineate the division of labor within the group, and not to rid himself of any portion of his responsibility to his patient. When the defendant entered into his undertaking to perform the surgical operation, a contractual relationship arose between him and his patient; she agreed to pay, and he agreed to render professional services. The services included not merely the exercise of skill in the application of the surgeon's knife but also skill in the final removal of all surgical sponges. Not until all of the latter had been properly removed was his undertaking completed. The defendant could not rid himself of any part of this duty by disavowing responsibility for it in his testimony.

The evidence showed that, before the defendant had completely closed the incision, one of the attendants reported that a sponge was missing. The incision was thereupon opened, a hurried search was made and the sponges were rechecked, but the missing sponge was not found. The result of the rechecking, the interchange of observations and the hurried search seemed to persuade all that no sponge was actually missing. At this point, the defendant called attention to the fact that it was necessary to resuscitate the patient as quickly as possible. The operation had continued for at least two hours, it was a major operation, and the patient had been subjected to severe shock. The defendant testified that at that time it was absolutely necessary that the operation should be carried on no further, and that even if he had known that a sponge had been left in the abdomen he would have allowed it to remain there temporarily, if he could not find it conveniently, for removal at a later operation.

The trial court thus instructed the jury:

> If you find from the evidence that the attention of the defendant, Dr. Day, was called to the possibility of the one sponge being short or missing, and if in the exercise of his judgment, if he did exercise his judgment, he ceased to explore the body of the patient for the sponge, after making such examination as he deemed prudent, if he made such examination, and if you find that the defendant in good faith decided to make no further exploration and search at that time for the reason that he considered such search might endanger the life of the patient, then he had a right to act upon his own judgment, and no negligence could be inferred therefrom, providing he exercised reasonable care and skill. . . . If you find that the defendant exercised his judgment based upon the exercise of reasonable care and skill, if he did, in the matter of his examination of the patient's body to ascertain if all sponges were accounted for, then he was not guilty of negligence, and plaintiff could not recover; but, if he failed to exercise reasonable care and skill, then I instruct you that the defendant would be liable, and your verdict should be for the plaintiff.

This, the supreme court held, fairly instructed the jury on the principles of law applicable to the problem before them.

The judgment of the court below, in favor of the defendant, was affirmed.

Appendicitis Attributed to a Strain

(Syde's Case (Maine), 142 A. 777)

The petitioner, Syde, claimed that in lifting a motor in the course of his employment he was subjected to a strain which caused appendicitis. He proceeded against the employer and an insurance company under the workmen's compensation act. The industrial accident commission granted compensation and, from a decree of the lower court affirming that action, the defendants appealed to the supreme judicial court of Maine. Syde had been apparently in good health and had never had appendicitis. When the alleged accident occurred, he and a co-employee were lifting a motor weighing from 350 to 400 pounds. To raise it high enough, he had to rise on his toes, exerting his full strength. As they were about to set the motor down, Syde thought he had snapped something. He suffered such severe pain that he was obliged to quit work and go home. The next afternoon he consulted a physician, and was operated on for appendicitis a few hours thereafter. The physician who operated testified that when he examined Syde he found that all the symptoms pointed to appendicitis and that this conclusion was confirmed by a blood test. He found the appendix acutely inflamed and distended to twice its normal size. He found no pus, fecal matter, gas, or other content. He found no adhesion indicating a prior attack. He was of the opinion that the inflammation had started within two days and was caused by a sudden, severe strain in lifting. This physician was carefully examined to ascertain the reasons for his opinion and to explain how the appendix, formed and located as it was, could be injured by tightened, contracted abdominal muscles, which would, as he admitted, give even pressure from such contraction. His answers, the court thought, showed that he assumed some facts which were different from the undisputed evidence and that some of his conclusions were, as the witness himself admitted, "getting into the realm of supposition." Another physician, called as an expert for the defendants, testified that while he would not say that it was out of the bounds of possibility, he had never met a case in which the appendix was inflamed by a strain of the abdominal muscles, although he had had nineteen years' experience and had operated many times for appendicitis. He had seen appendicitis caused by a blow which had ruptured some of the vessels. After reviewing the evidence, the court concluded that the finding that the strain caused the appendicitis was a conclusion of speculation, surmise or conjecture and not based on competent evidence. The appeal of the defendants from the decree granting compensation was sustained.

A Nurse as an Employee of Patient

(Moody v. Industrial Accident Commission et al. (Calif.), 269 P. 542)

A special nurse, a respondent in this case, attended the petitioner, Moody, who was in a hospital, "suffering from an infection." After attending the petitioner for a week, she complained of a soreness in her thumb, which later "developed into an infection," resulting in her remaining in the hospital as a patient for two months. She proceeded against the petitioner under the workmen's compensation act of California and from an award of the industrial accident commission in her favor, the petitioner brought certiorari to the supreme court.

The workmen's compensation act, Section 8 (b), provides as follows:

> Any person rendering service for another, other than as an independent contractor, or as expressly excluded herein, is presumed to be an employee within the meaning of this act.

The sole question before the court was whether a graduate nurse, attending a patient in her professional capacity, becomes an employee of the patient, within the meaning of the workmen's compensation act, or is to be considered an independent contractor. The court said that an independent contractor is one who renders service in the course of an independent employment or occupation, following his employer's desires only in the results of the work, and not the means whereby it is to be accomplished. It was admitted that the nurse would have refused to obey orders given her by the petitioner with reference to the methods of treating him. She would take orders from the patient with the respect to minor services looking to his comfort but that measure of control falls far short of that complete and authoritative control which is the decisive test of the relationship of master and servant. Ordinarily, a trained nurse, performing her usual duties with the skill which is the result of training in that profession, does not come within the definition of a servant, but rather is one who renders personal services to an employee in pursuit of an independent calling. *Parkes* v. *Seasongood* (C. C.) 152 F. 583. The professions of doctor and nurse are so closely allied, the court said, that decisions applicable to one would appear to apply equally well to the other. In the great majority of instances the inference that it is the implied intention of the parties to contracts for the services of a medical practitioner that he is not to be under the employer's control, with the respect to the details of his work, is corroborated by the consideration that the employer is a person who does not possess the technical skill which would qualify him to exercise such control, and that it would, for that reason, be highly inexpedient for him to attempt to exercise it. There is no more distinct calling, the court said, than that of the physician and none in which the employee is more distinctly free from the control or direction of his employer. Reasoning from the foregoing analogy, the supreme court held that a nurse must be deemed to be an independent contractor within the meaning of the workmen's compensation act and annulled the award.

Inguinal Hernia and Rupture Differentiated

(Bayer v. Chicago, B. & Q. R. Co, (S. D.), 220 N. W. 459)

The plaintiff was employed in operating coal shutes maintained by the defendant railroad company. In the course of the heavy lifting required, he felt pains in the groin. In time he developed a complete inguinal hernia, and for it he sought compensation under the federal employers' liability act. From a judgment in the circuit court, the defendant company appealed to the supreme court of South Dakota. "An inguinal hernia," the supreme court said, "is described by medical men as differing from a rupture, in that there is no lesion of the abdominal muscles, but the intestine passes through a natural opening, the inguinal canal, which in normal cases is closed at or about the time of birth by what are termed the inner and outer rings." The railroad company claimed that if an inguinal hernia develops in later life, it is because of an abnormal condition of the rings, that this condition is in the nature of a disease, and that, therefore, the condition complained of by the plaintiff was in the nature of a disease, for which the railroad company was not liable. The supreme court said that while the injury suffered by the plaintiff was not an injury by accident within the commonly accepted meaning of the word accident, the federal employers' liability act does not exprcssly confine injuries for which compensation may be awarded to injuries by accident. It makes the employer liable for injury or death resulting wholly or in part from negligence. The plaintiff in the present case, said the court, assumed the risks incident to the heavy lifting. Conceding all of the evidence favorable to him to be true, his case must fail because of his failure to connect his injury with any negligence on the part of the company. The judgment of the circuit court was therefore reversed.

Society Proceedings

COMING MEETINGS

American Medical Association, Portland, Ore., July 8-12. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Allergy, Portland, Ore., July 8-9. Dr. Warren T. Vaughan, 118 E. Franklin St., Richmond, Va., Sec'y.

American Bronchoscopic Society, San Francisco, July 6. Dr. L. H. Clerf, 128 South 10th Street, Philadelphia, Secretary.

American Dermatological Association, San Francisco, July 1-3. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.

American Federation of Organizations for the Hard of Hearing, Cleveland, June 24-27. Miss Betty C. Wright, 1601 Thirty-Fifth Street, N. W., Washington, D. C., Secretary.

American Gynecological Society, Old Point Comfort, Va., May 20-22. Dr. Floyd E. Keene, 133 South 36th Street, Philadelphia, Secretary.

American Heart Association, Portland, Ore., July 9. Dr. Haven Emerson, 370 Seventh Avenue, New York, Secretary.

American Hospital Association, Atlantic City, June 17-21. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

American Laryngological Association, Atlantic City, May 20-23. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, San Francisco, July 4-6. Dr. R. L. Loughran, 33 E. 63d Street, New York, Sec'y.

American Neurological Association, Atlantic City, May 27-29. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., June 10-12. Dr. Emory Hill, 501 East Franklin Street, Richmond, Va., Secretary.

American Otological Society, Atlantic City, May 22-24. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.

American Pediatric Society, St. Louis, May 20-22. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Society of Clinical Pathologists, Portland, Ore., July 5-8. Dr. H. J. Corper, National Jewish Hospital, Denver, Secretary.

American Urological Association, Seattle, July 1-3. Dr. Alexander Randall, Medical Arts Building, Philadelphia, Secretary.

Conference of State and Provincial Health Authorities of North America, Washington, D. C., May 31-June 1. Dr. A. J. Chesley, State Board of Health, St. Paul, Minn., Secretary.

Conference of State and Territorial Health Officers with the Public Health Service, Washington, D. C., June 3-4.

Connecticut State Medical Society, Waterbury, May 22-23. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Idaho State Medical Association, Lewiston, July 5-6. Dr. J. N. Davis, Kimberly, Secretary.

Illinois State Medical Society, Peoria, May 21-23. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.

Maine Medical Association, Poland Springs, June 17-19. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Massachusetts Medical Society, Boston, June 10-12. Dr. Walter L. Burrage, 182 Walnut Street., Brookline, Secretary.

Medical Women's National Association, Portland, Ore., July 7-9. Dr. Elizabeth Kittredge, 3906 McKinley Street, Washington, D. C., Sec'y.

National Tuberculosis Association, Atlantic City, May 27-30. Dr. C. J. Hatfield, Henry Phipps Institute, Philadelphia, Secretary.

New Hampshire Medical Society, Manchester, May 28-29. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, June 12-15. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.

New Mexico Medical Society, Taos, June 12-14. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.

New York, Medical Society of the State of, Utica, June 3-6. Dr. D. S. Dougherty, 2 East 103d Street, New York, Secretary.

New York State Association of Public Health Laboratories, Utica, June 3. Mr. M. B. Kirkbride, New Scotland Avenue, Albany, Secretary.

North Dakota State Medical Association, Fargo, June 6-7. Dr. J. G. Lamont, San Haven, Secretary.

Oklahoma State Medical Association, Oklahoma City, May 27-29. Dr. C. A. Thompson, Barnes Building, Muskogee, Secretary.

Pacific Coast Oto-Ophthalmological Society, Salt Lake City, July 1-3. Dr. Walter F. Hoffman, 817 Summit Avenue, Seattle, Secretary.

Rhode Island Medical Society, Providence, June 6. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.

Society of Neurological Surgeons, Montreal, Canada, June 3-5. Dr. Francis C. Grant, 133 South 36th Street, Philadelphia, Secretary.

Texas, State Medical Association of, Brownsville, May 21-23. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.

Utah State Medical Association, Salt Lake City, July 1-3. Dr. M. M. Critchlow, Boston Building, Salt Lake City, Secretary.

Western Branch of the American Urological Association, Vancouver, B. C., July 5. Dr. W. E. Stevens, Flood Building, San Francisco, Secretary.

West Virginia State Medical Association, Martinsburg, May 21-23. Mr. Joe W. Savage, 303 Professional Building, Charleston, Executive Sec'y.

Wyoming State Medical Society, Casper, June 24-25. Dr. Earl Wheden, 50 North Main Street, Sheridan, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Hygiene, Baltimore

9: 247-511 (March) 1929

Experimental Infections with Trypanosoma Lewisi in Guinea-Pig. F. A. Coventry, Baltimore.—p. 247.
In Vivo Trypanolysis with Reference to Zones of Inhibition, Relapse Phenomena and Immunologic Specificity. T. L. Johnson, Chicago.—p. 260.
Nonoccurrence of Zone Phenomenon in Curative Action of Drugs and Normal Human Serum in Trypanosoma Equinum Infection. T. L. Johnson, Chicago.—p. 283.
Vitamin D and Resistance of Chickens to Parasitism. J. E. Ackert and L. A. Spindler, Manhattan, Kan.—p. 292.
Relapse in Bird Malaria. R. D. Manwell, Baltimore.—p. 308.
Studies on Bionomics of North American Anophelines: Physical and Chemical Factors in Relation to Distribution of Larvae in Northwestern North Carolina. M. F. Boyd, New York.—p. 346.
*Potency and Polyvalence of Antistreptococcus Serum Used in Treatment of Scarlet Fever. A. B. Wadsworth, M. B. Kirkbride and J. L. Hendry, Albany, N. Y.—p. 371.
Coccidiosis in Isolated Rabbit Colony: Clinical Symptoms, Pathology, Immunology, and Attempted Therapy of Disease. J. Chapman, Baltimore.—p. 389.
*Pharmacology and Toxicology of Tetrachlorethylene. P. D. Lamson, B. H. Robbins and C. B. Ward, Nashville, Tenn.—p. 430.
Typhoid in Massachusetts. G. H. Bigelow and C. R. Doering, Boston.—p. 445.
Production of Weak Virucidal Serum Against Avian Molluscus in Hens. E. Megrail, Cleveland.—p. 462.
*Irradiations from Quartz Mercury Vapor Lamp as Factor in Control of Common Colds. G. H. Maughan and D. F. Smiley, Ithaca, N. Y.—p. 466.
Cold-Susceptibles vs. Normals. D. F. Smiley, Ithaca, N. Y.—p. 473.
Weekly Incidence of Colds in Normal and Cold-Susceptible Groups Throughout a Winter. D. F. Smiley, Ithaca, N. Y.—p. 477.
Weighted Mean Egg Count as Index of Amount of Hookworm Infection in a Community. A. C. Chandler, Houston, Texas.—p. 480.
Respiratory Immunity in Rabbits: VII. Resistance to Intranasal Infection in Absence of Demonstrable Antibodies. C. G. Bull and C. M. McKee, Baltimore.—p. 490.
*Experiments with Nicotine on Growing White Mice. C. H. Thienes, Portland, Ore.—p. 500.
Human Intestinal Parasites in North China. E. C. Faust, New Orleans.—p. 505.
Subgenus Phalangomyia of Culex Linn. (Diptera, Culicidae). H. G. Dyar.—p. 509.

Potency and Polyvalence of Antistreptococcus Serum Used in Treatment of Scarlet Fever.—The efficiency of serum therapy in the treatment of scarlet fever depends very largely on the potency and polyvalence of the serum that is used. The suppression of the early toxic action and the prevention of the serious complications that follow the primary toxemia demand prompt administration of a highly potent serum. Wadsworth et al. assert that serums now available for the treatment of scarlet fever have been found to test far below the potency indicated by the label, and a larger number have been found, within the limits of the test, to be deficient in polyvalence as well. Comparative titrations of serums from individual horses used by different laboratories in the production of the scarlet fever antitoxin have also in general shown material of relatively low potency and limited polyvalence, as determined by the test. Emphasis is laid on the importance of careful selection of the standard strain, or strains, to be used in the production of the serum as to the potency of its toxin and especially its antigenic action as indicated by the polyvalence of the antitoxin produced with it. These conditions have thus far apparently best been met by the streptococcus strain, Dochez N. Y. number 5. The results of this study raise questions as to the reliability of methods of determining the potency of the serums, or the stability of certain concentrated products, and even as to the practical value of concentration. They further suggest that the present method of control by potency tests at the time of issue only may be insufficient to provide all the safeguards necessary in the case of a new therapeutic product, until proof of uniform reliability is established.

Pharmacology and Toxicology of Tetrachlorethylene.—On account of the very slight degree of absorption in dogs, tetrachlorethylene would be expected to be nontoxic when taken by mouth. It has been shown not to cause any pathologic changes after absorption by inhalation. On this account the precautions necessary for the giving of carbon tetrachloride are unnecessary in giving tetrachlorethylene, although it is suggested by Lamson et al. that they be observed until this new drug has been more extensively used in man.

Irradiations from Quartz Mercury Lamp in Control of Common Colds.—Maughan and Smiley found by observation of a group of persons susceptible to colds that a ten to sixteen minute exposure of the naked body (from five to eight minutes front, and from five to eight minutes back) during the dark months of the year to the rays of an ordinary mercury vapor lamp once a week at a lamp-table distance of 30 inches will in most instances reduce by at least 40 per cent the incidence of colds in cold-susceptible persons. Since lack of ultraviolet irradiation is only one of several known factors involved in reducing bodily resistance to acute respiratory infection, the control of this factor alone must not be expected to be a complete panacea for the prevention of colds. The results reported by the authors would, however, appear to justify the use of short weekly irradiations with ultraviolet rays in certain cases of marked susceptibility to colds in which even a 40 per cent decrease in the frequency of colds would be appreciated.

Experiments with Nicotine on Growing White Mice.—Thienes injected nicotine subcutaneously into fourteen growing white mice twice daily, in doses sufficient to cause symptoms referable to the central nervous system; an equal volume of 0.85 per cent sodium chloride was injected into eighteen controls. There developed a marked decrease in susceptibility to nicotine, as the mice given nicotine grew older and larger. The cause of the decreased susceptibility was not determined. Nicotine had no apparent effect on growth, as judged by the weight-growth curves.

American J. Ophthalmology, Chicago

12: 265-360 (April) 1929

Vascular State and Glaucoma. F. P. Calhoun, Atlanta, Ga.—p. 265.
Perimetry: II. Diagnostic Scale for Color Fields. C. E. Ferree, G. Rand and M. M. Monroe, Baltimore.—p. 269.
Photomicrography of Living Eye: V. Physics of Certain Types of Corneal Opacity. L. D. Redway, New York.—p. 286.
Rhabdomyoma of Eyelid. L. L. Mayer, St. Louis.—p. 293.
Retinal Hemorrhage as Expression of Vicarious Menstruation. C. Loeb, Hubbard Woods, Ill., and S. J. Meyer, Chicago.—p. 296.
Value of Postcycloplegic Test. W. H. Crisp, Denver.—p. 298.
Visual Test Card. A. Cowan, Philadelphia.—p. 301.
Superficial Necrosis of Entire Corneal Surfaces After Gas Explosion; Complete Restoration. B. Chance, Philadelphia.—p. 303.

American J. Pathology, Boston

5: 99-195 (March) 1929

Lympho-Epithelioma. J. Ewing, New York.—p. 99.
Biopsy Histology in Grading of Rectal Carcinoma. F. W. Stewart and J. W. Spies, New York—p. 109.
*Progressive Anemia Following Single Intramarrow Injection of Bacillus Welchii Toxins. J. C. Torrey and M. C. Kahn, New York.—p. 117.
*Hemangioblastoma of Cerebellum (Lindau's Disease). L. M. Davidoff, New York.—p. 141.
Filtrable Viruses: III. Vaccine Virus. R. N. Nye and F. Parker, Jr., Boston.—p. 147.
*Neuro-Epithelioma of Cerebellum. P. C. Bucy and W. S. Muncie, Detroit.—p. 157.
*Effect of Combined Feeding of Potassium Iodide and Anterior Lobe of Pituitary on Thyroid. H. A. McCordock, Saint Louis.—p. 171.
*Fenestrations of Semilunar Valves. A. N. Foxe, New York.—p. 179.
So-Called Infectious Sarcoma of Dog in Eye and Frontal Region. W. H. Feldman, Rochester, Minn.—p. 183.

Anemia Following Intramarrow Injection of Bacillus Welchii Toxins.—Torrey and Kahn found that the single inoculation of 0.5 cc. of a potent sterile *Bacillus welchii* toxin into the tibial marrow of the rabbit or a monkey gives rise to a chronic, persistent and finally often fatal anemia characterized by low hemoglobin content of the blood, low erythrocyte count and a color index generally above 1. Anisocytosis and at times poikilocytosis are pronounced. A single intravenous inoculation of *B. welchii* toxin of the same dosage or a series of increasing doses gives rise to an anemia of the same type as that resulting from marrow inoculation, but is followed within from three to

four weeks by an immunity and a return of the blood to a normal or nearly normal condition. Such intravenous inoculation of the toxin causes some mucous degeneration of the fat cells and an increase in the cellular elements in the marrow, particularly the leukocytes, but results in nothing like the destructive action of inoculation directly into the marrow. The single inoculation of 0.5 cc. of the toxin into tibial marrow starts a degenerative process which apparently affects the whole marrow system. It is suggested that the chronic experimental anemia produced in this way may prove a useful means for evaluating the potency of extracts of liver and other organs as blood regenerating agents.

Hemangioblastoma of Cerebellum.—In the case described by Davidoff there was no hereditary taint, no angiomatosis of the retinas, and no cysts or tumors of other organs. The cyst and tumor of the cerebellum, however, were identical with those described by Lindau.

Neuro-Epithelioma of Cerebellum.—A case of intracranial tumor in a white boy, aged 5 years, lasting three months from the first definite symptoms to sudden death following ventricular puncture, is presented by Bucy and Muncie. The tumor was situated in the left inferior cerebellar lobe, displacing the fourth ventricle, and overhanging the medulla and cord. Histologically the tumor was a true neuro-epithelioma, the second neuro-epithelioma situated in the cerebellum to be described.

Effect of Potassium Iodide and Anterior Lobe of Pituitary on Thyroid.—McCordock concludes that the marked mitotic proliferation induced so readily in the thyroid of guinea-pigs by potassium iodide is prevented by anterior pituitary gland when the two are fed to the same animal.

Fenestrations of Semilunar Valves.—A statistical study was made by Foxe of fenestrations of the semilunar valves of the heart in 300 successively observed hearts. One or more fenestrations were present. The aortic valves were involved in 188 cases; the pulmonic in 187 cases. In an estimation of the total number of fenestrations, the frequency of the pulmonic involvement exceeded the aortic (pulmonic 1045, aortic 789); whereas in an estimation of the total number of cusps involved the reverse was true (pulmonic 314, aortic 325). It is suggested that fenestrations may occasionally cause an aortic insufficiency.

American J. Tropical Medicine, Baltimore

9: 83-142 (March) 1929

Immunologic Investigations on Tropical Sprue in Porto Rico. C. Weiss and F. Landrón, San Juan, Porto Rico.—p. 83.
Splenomegaly Showing Paratyphoid Bacilli: Case. H. E. Meleney, Nashville, Tenn.—p. 97.
Epidemiology of Blackwater Fever in Siam. E. C. Cort, Chiengmai, China.—p. 105.
Development of Cryptocotyle (Heterophyidae) in Its Final Host. H. W. Stunkard and C. H. Willey, New York.—p. 117.
Pellagra Associated with Organic Disease of Gastro-Intestinal Tract. R. H. Turner, New Orleans.—p. 129.

Annals of Internal Medicine, Ann Arbor, Mich.

2: 1001-1137 (April) 1929

*Insulin and Carbohydrate Tolerance. E. P. Joslin, Boston.—p. 1001.
Cardiovascular Lesions Following Injury to Chest. M. H. Kahn and S. Kahn, New York.—p. 1013.
Measurements of Renal Veins: Postural Albuminuria. C. Quinan, San Francisco.—p. 1047.
Massive Atelectasis. C. H. Cocke, Asheville, N. C.—p. 1054.
Thymoma of Lymphosarcoma Type. E. E. Smith, Washington, D. C.—p. 1063.
Etiology and Treatment of Encephalitis. S. E. Salzman, Toledo, Ohio.—p. 1076.
*Histopathology of Appendiceal Amebiasis: Case. W. F. Harrison, Montreal, Canada.—p. 1081.
Tularemia. V. E. Simpson, Louisville, Ky.—p. 1092.

Insulin and Carbohydrate Tolerance.—Five cases of diabetes are reported by Joslin which show during periods of six years gradual gains in tolerance for carbohydrate varying from 88 to 178 Gm. with the use of from 15 to 28 units of insulin. The gains in tolerance have been greater in the latter half of the period. Joslin sees no reason why these gains should not continue.

Microscopic Changes of Appendiceal Amebiasis.—A case of chronic amebic dysentery is reported by Harrison in a man who had never been south of the state of Michigan. The condition showed such features of malignant disease that a tentative diagnosis of carcinoma of the colon was made. The diagnosis of amebic dysentery was made during the routine examination of the appendix following operation, on the basis of the character of the ulcers and the finding of the amebas. A description is given of the microscopic changes in the appendix in this case.

Archives of Otolaryngology, Chicago

9: 237-366 (March) 1929

*Laryngeal Cancer. J. E. Mackenty, New York.—p. 237.
Roentgen Observations on Safety Pins as Foreign Bodies. W. F. Manges, Philadelphia.—p. 245.
"Suction Mastoids." J. C. Scal, New York.—p. 251.
Angina Agranulocytosis: Three Cases. J. B. Potts, Omaha.—p. 256.
Endoscopic Treatment of Pulsion Diverticulum. C. J. Imperatori, New York.—p. 266.
Congenital Atresia of Esophagus with Tracheo-Esophageal Fistula. W. L. Simpson, Memphis, Tenn.—p. 267.
Antro-Ethmosphenoidal Operation. F. M. Turnbull, Los Angeles.—p. 271.
Replacement of Lower End of Dislocated Septal Cartilage Versus Submucous Resection of Dislocated End of Septal Cartilage. M. Metzenbaum, Cleveland.—p. 282.
Osteoma of Frontal Sinus: Case. J. Browder, New York.—p. 297.
*Case Presenting Fourteen Upper Molar Teeth. G. C. Saunders and G. B. New, Rochester, Minn.—p. 307
Operating and Visualizing Sinuscope. S. Morse, New York.—p. 313.
Modification of Lichtwitz Antrum Trocar. G. D. Wolf, New York.—p. 317.
Peroral Endoscopy. L. H. Clerf, Philadelphia.—p. 318.

Laryngeal Cancer.—More than 700 patients with cancer of the larynx have been studied by Mackenty. Eighty per cent of the cases were intrinsic and curable in their inception. Two hundred and thirty patients were treated surgically with a surgical death rate of under 3 per cent. Recurrences in incipient intrinsic cancer occurred in 3 per cent of the patients after laryngectomy and in 35 per cent after thyrotomy. Recurrences in intrinsic moderately advanced cancer occurred in 25 per cent; in borderline cancer, in 35 per cent, and in extrinsic cancer, in almost 100 per cent. Two patients with early cancer of the epiglottis have not had any recurrence after nearly two years. Mackenty feels that in this particular field cancer is increasing. A certain percentage of this increase may be accounted for by greater knowledge and alertness on the part of the medical profession. This fails, however, to account for the increased incidence of cancer in young persons, especially in women, and in old people. He says that in his earlier experiences, cancer was limited almost entirely to the middle aged; it is now common in persons in their thirties and even in their twenties, and it is not rare in persons between 75 and 80 years of age. Within eighteen months, he has removed the larynx from a man, aged 29, and from a girl aged 20.

Case Presenting Fourteen Upper Molar Teeth.—Saunders and New report the case of a man who sought advice concerning the possibility of cosmetic improvement of his face. He had a grotesque, asymmetric face. The left eyelid could not be elevated more than half the normal distance. Vision in the left eye, however, was good. There was deformity of both zygomatic processes, and a small discharging sinus was noted in the right zygomatic region. Scars were present at the corners of the mouth and extended well up on the cheeks. There was a partial paralysis of the right upper lip. The chief variation was in the maxillae. The upper teeth protruded markedly. The palate was highly arched, and the molar teeth were arranged in a formation somewhat resembling a buckled, curved line. The total number of teeth remaining in the upper jaw was twenty-two. There were eight molars on the left side and six on the right. All of these teeth were of normal size and of normal conformation. Occlusion was extremely faulty; all upper teeth anterior to the premolars protruded beyond the lower incisors. Roentgenographic studies revealed the fact that the teeth were all separate at their roots. Only one typical premolar was found on each side. The lower teeth were normal.

Arch. of Physical Therapy, X-Ray, Radium, Omaha

10: 93-137 (March) 1929

Action of Luminous Rays and Mode of Action. C. Sonne, Copenhagen, Denmark.—p. 93.
Zinc Ionization Considered from Electrical and Bacteriologic Standpoint. A. R. Friel, London, England.—p. 104.
Reticulo-Endothelial System and Diathermy. G. Kolischer, Chicago.—p. 108.
Natural Heliotherapy. A. Gottlieb, Los Angeles.—p. 110.
Neglected Focus of Infection (Cervix Uteri). M. J. Breuer, Lincoln, Neb.—p. 112.
Sphere Gap Voltmeter. R. A. Watters, Reno, Nev.—p. 114.

Archives of Surgery, Chicago

18: 935-2045 (April) 1929

This issue is a special number in honor of the sixtieth birthday of Dr. Harvey Cushing. All of the authors are former pupils of Dr. Cushing, and have contributed toward the publication. The contents consist of eighty-two papers covering 1,110 pages.

Arkansas M. Soc. Journal, Little Rock

25: 175-190 (March) 1929

Lateral Sinus Thrombosis: Case. P. L. Mahoney, Little Rock.—p. 175.
Ten Months' Sojourn of Open Safety Pin in Child's Larynx. St. C. Cooper, Fort Smith.—p. 176.
Differential Diagnosis of Ovarian Cyst: Three Cases. J. M. Troutt, Honolulu, T. H.—p. 177.

Delaware State Medical Journal, Wilmington

1: 35-52 (March) 1929

Treatment of Goiter. C. F. Nassau, Philadelphia.—p. 35.
Acute Cervical Adenitis in Children. C. E. Wagner, Wilmington.—p. 39.
Pancreatitis. H. V. P. Wilson, Dover.—p. 41.

Georgia M. Assoc. Journal, Atlanta

18: 101-139 (March) 1929

Malaria Control. C. C. Bass, New Orleans.—p. 101.
Choice of an Anesthetic. C. H. Richardson, Jr., Macon.—p. 105.
Cell Evolution: Relation to Health and Disease. J. L. Campbell, Atlanta. —p. 108.
Pinworm Infection. M. A. Fort, Bainbridge.—p. 111.
Neurologic Diseases. J. C. Weaver, Atlanta.—p. 114.
Epilepsy. W. A. Smith, Atlanta.—p. 117.
Asthma in Children: Seventy-Two Cases. H. M. Davison, Atlanta.—p. 122.

Journal of Experimental Medicine, Baltimore

49: 525-704 (April 1) 1929

*Treatment of Experimental Acute General Peritonitis in Dog with Ileostomy and Sodium Chloride Solution. T. G. Orr and R. L. Haden, Kansas City, Kan.—p. 525.
*Rapid Shallow Breathing Resulting from Pulmonary Congestion and Edema. E. D. Churchill and O. Cope, Boston.—p. 531.
*Nonhemolytic Streptococci and Acute Rheumatic Fever. R. N. Nye and D. Seegal, Boston.—p. 539.
Initiation of Growth of Facultative Anaerobes as Related to Oxidation-Reduction Processes in Medium. R. Dubos, New York.—p. 559.
Relation of Bacteriostatic Action of Certain Dyes to Oxidation-Reduction Processes. R. Dubos, New York.—p. 575.
Bacillus Typhosus Toxic Substances: II. Effect of Serums on Factors Determining Local Skin Reactivity to Filtrates of Bacillus Typhosus Cultures. G. Shwartzman, New York.—p. 593.
Blood Chlorides in Conditions Associated with Pneumonia. C. A. L. Binger, R. V. Christie, J. S. Davis, Jr., and A. Hiller, New York. —p. 603.
Reactions of Rabbits to Nonhemolytic Streptococci: I. General Tuberculin-Like Hypersensitiveness, Allergy or Hyperergy Following Secondary Reaction. C. L. Derick and H. F. Swift, New York.—p. 615.
Indifferent Streptococci: III. Allergizing Capacity of Different Strains. C. H. Hitchcock and H. F. Swift, New York.—p. 637.
Transmission of Fowl Pox by Mosquitoes. I. J. Kligler, R. S. Muckenfuss and T. M. Rivers, New York.—p. 649.
Herpes Encephalitis in Cebus Monkeys. H. Zinsser, Boston.—p. 661.
Strain of Bacillus Abortus from Swine. T. Smith, Princeton, N. J.—p. 671.
*Reaction of Human Bile and Relation to Gallstone Formation. J. G. Reinhold and L. K. Ferguson, Philadelphia.—p. 681.
Differentiation Between Toxic Substances in Anaerobically Produced Autolysates of Pneumococci (Types I and II). J. T. Parker, New York.—p. 695.
Survival of Virus of Poliomyelitis for Eight Years in Glycerol. C. P. Rhoads, New York.—p. 701.

Treatment of Peritonitis in Dog with Ileostomy and Sodium Chloride Solution.—In this study by Orr and Haden of general peritonitis, treated with ileostomy from the beginning, no beneficial results were noted. Life was not prolonged by this method of treatment nor were the typical chemical changes in the blood noted in experimental general peritonitis prevented. The animals treated with 1 per cent solution of sodium chloride hypodermically in addition to ileostomy lived three times as long as those who were not given salt solution. The administration of the sodium chloride solution was quite effective in preventing the chemical changes of the blood noted in animals without such treatment. The results of treatment with sodium chloride in this study are similar to those previously recorded in the treatment of high intestinal obstruction.

Pulmonary Congestion and Edema Causing Rapid Shallow Breathing.—Churchill and Cope studied the effects of the experimental production of pulmonary congestion and edema in a lung completely isolated from the general circulation, but with an intact nerve supply. Their results add further evidence to support the hypothesis that the rapid shallow breathing attending congestion and edema of the lungs is due to the stimulation of nerve endings in the lungs.

Nonhemolytic Streptococci and Acute Rheumatic Fever.—Blood cultures made by Nye and Seegal in twenty-five cases of acute rheumatic fever were negative for nonhemolytic streptococci of both the alpha and the gamma types. Nonhemolytic (gamma type) streptococci were frequently recovered from the throats of patients with this disease. Similar organisms were recovered just as frequently from the throats of normal individuals. Although these nonhemolytic streptococci were morphologically and culturally identical, not only among themselves but also when compared with stock Small and Birkhaug strains, all, including the latter, have failed to show any noteworthy degree of hemogeneity. Representative strains of these streptococci have proved to be relatively nonpathogenic for rabbits following intravenous injection. These organisms, with a few exceptions, have failed to produce soluble skin-reacting toxins comparable to Birkhaug's standard test toxin. These facts seem to invalidate the assumption that any of these nonhemolytic streptococci play a specific rôle in the etiology of acute rheumatic fever.

Reaction of Human Bile: Relation to Gallstone Formation.—Reinhold and Ferguson assert that the human gallbladder acidifies the bile. The hydrogen ion concentration of gallbladder bile is increased considerably in cases of obstruction of the common or cystic ducts. The highest values were found following complete obstruction. The occurrence of gallstones was not associated with a consistent change in the hydrogen ion concentration of the gallbladder bile.

Journal of Laboratory & Clin. Med., St. Louis

14: 495-596 (March) 1929

*Etiology of Acute Leukemias. A. S. Rubnitz, Omaha.—p. 497.
*Results from Elimination of Foci of Infection and Use of Vaccines Prepared from Streptococci Having Elective Localizing Power. E. C. Rosenow and A. C. Nickel, Rochester, Minn.—p. 504.
*Purpura Hemorrhagica: Three Cases. O. B. Hunter, Washington, D. C. —p. 513.
*Examining Microscopically by Razor Section Method 2,000 Malignant Tissues. B. T. Terry, Rochester, Minn.—p. 519.
Value of Leukocyte Counts, According to Schilling's Formula. F. W Niehaus, Omaha.—p. 531.
Specificity of Bacteria to Bacteriolytic Action of Chemicals with Note on Application to Chemotherapy. R. A. Keilty, Washington, D. C. —p. 539.
System of Sputum Analysis for Presence of Acid-Fast Bacilli. H. C. Sweany and A. Stadnichenko, Chicago.—p. 547.
Photo-Electric Hemoglobinometer. C. Sheard and A. H. Sanford, Rochester, Minn.—p. 558.

Etiology of Acute Leukemias.—Rubnitz fails to see any logical reason for the division of leukemias into lymphogenic and myelogenic types, because clinically they represent one and the same entity; microscopically one cannot always draw a line between lymphogenic and myelogenic cells. The oxydase reaction is of value only if positive. Acute leukemias, while always associated with infection, are not caused by any specific micro-organisms. Necrotic inflammation of mucous membranes is usually associated with acute leukemias as well as with the condition known as "agranulocytosis." The author believes that some obscure toxin liberated by necrotic membranes, by nature a leukocytolysin, is very likely responsible for both acute leukemia and agranulocytosis. Acute leukemia and agranulocytosis may be caused by a toxin of the same quality; the difference in the body reaction is quite likely due to quantitative variations in toxins produced and liberated.

Results from Elimination of Foci of Infection.—Considerable evidence has been obtained by Rosenow and Nickel which suggests that tissues in the cases of various chronic diseases, particularly the diseased tissues, become hypersensitive to the infecting organisms and their toxic products, as indicated by exacerbations which are particularly prone to occur following too strenuous or incomplete removal of foci of infection, and by the reactions which sometimes follow injection of autogenous vaccines, a point stressed by Kolmer. If the dosage of vaccine is gaged so that the local and constitutional reactions are relatively slight, the tolerance may often be greatly increased, even tenfold, and the patient improves, a result in accord with that of Wherry and others in bronchial asthma. If the dosage is too

large tolerance may not increase but actually diminish, reactions may become progressively more marked with each succeeding injection and the patient's condition grow worse. The authors feel that this narrow limit of effective dosage, determined more by the reaction in the patient than by the number of bacteria, and the use, without bacteriologic diagnosis, of stock vaccines made from bacteria long cultivated in the laboratory, have contributed much to the general disrepute into which vaccine therapy has unfortunately fallen.

Purpura Hemorrhagica.—In all three of the cases reported by Hunter, the outstanding clinical and pathologic manifestations which seemed to be more or less common and characteristic were: 1. The age of the patients. Two were young girls about the age of puberty, and the older patient, a woman, aged 22, dated the beginning of the purpura back to about the time of her first menstrual period. 2. Subcutaneous hemorrhages of a typical purpuric character, scattered more or less over the entire body, without pain, visceral crises or other complicating diseases. 3. Hemorrhages from the mucous membranes, especially the gums and uterus, particularly at the time of menstruation. 4. Low blood platelet counts, but not excessively decreased. 5. Prolonged bleeding time; deficiency in the retraction of the clot without any significant change in the coagulation time. 6. No significant change in the blood picture, except that of a secondary anemia, with a tendency to a leukocytosis and an increase in the mononuclear and eosinophilic elements. 7. Sufficient enlargement of the spleen to be definitely palpable on physical examination. 8. The definite improvement by transfusion. Two patients were apparently cured by splenectomy.

Examining Microscopically by Razor Section Method Two Thousand Malignant Tissues.—The razor section method described by Terry is rapid, easy, inexpensive and dependable, and is applicable both to fresh unfixed tissue and to tissue fixed in formaldehyde. No carbon dioxide is employed. Artefacts are few. In studying by the razor section method 2,000 malignant tissues, a number of improvements in technic have been made. Thin slices of tissue can be cut still thinner and very minute specimens can now be successfully stained and mounted. The rapid fixation of some tissues in hot formaldehyde has been found advantageous, and razor sections which do not fade quickly have been secured by staining with hematoxylin. By using the improved technic and restudying tissues that have given difficulty, the diagnoses made on razor sections of 2,000 tissues have agreed satisfactorily with those obtained by the pathologists of the Mayo Clinic using microtomes in 98 per cent of the cases.

Kentucky Medical Journal, Bowling Green

27: 91-136 (March) 1929

Larger Diagnosis. S. R. Roberts, Atlanta, Ga.—p. 94.
Hypertension. C. C. Turner, Glasgow.—p. 100.
Pelvic Inflammatory Disease. E. L. Henderson, Louisville.—p. 105.
Chronic Appendicitis. G. P. Grigsby, Louisville.—p. 108.
Eye Observations in Fractures of Skull and Severe Head Injuries. M. L. Gunn, Harlan.—p. 119.
Spinal Fusion (Hibbs') Operation for Potts Disease. W. B. Owen, Louisville.—p. 122.
Digitalis Therapy. J. W. Scott, Lexington.—p. 124.
Marked Antral Suppuration with Single Symptom (Ozena): Case. S. G. Dabney, Louisville.—p. 131.

Maine M. Assoc. Journal, Portland

20: 33-45 (March) 1929

Rôle of Latent and Active Infection in Joint Pathology. W. R. MacAusland, Boston.—p. 33.
History of Penobscot Medical Association. D. McCann, Bangor.—p. 38.

Minnesota Medicine, St. Paul

12: 181-246 (April) 1929

Minimal Pulmonary Tuberculosis: Its Detection. J. A. Myers, Minneapolis.—p. 181.
Clinical Experiences with Eclampsia. J. L. Mills, Winnebago.—p. 186.
Malta Fever: Case. R. W. Giere, Minneapolis.—p. 191.
Addison's Disease: Two Cases. C. K. Petter, Oak Terrace.—p. 194.
Types and Treatment of Chronic Arthritis. M. S. Henderson and P. S. Hench, Rochester.—p. 202.
*Tuberculosis and Pregnancy. D. W. Hutchinson, Nopeming.—p. 211.
Some Great Arabians. E. T. Herrmann, St. Paul.—p. 214.

Tuberculosis and Pregnancy.—In Hutchinson's experience the death rate among tuberculous women not pregnant has been slightly lower than that in men patients, while the group having tuberculosis either prior to pregnancy or during term or after delivery have approximately a 10 per cent higher mortality than the other women. He has made a complete study of 211 of these women, all sanatorium patients admitted on account of active tuberculosis. Of twelve women developing tuberculosis before pregnancy, seven have died. Four women had a reactivation of the process shortly after the first pregnancy, two immediately after the second child, having borne the first delivery well. One woman broke down after many pregnancies, while four remained apparently well for several years before the disease became active. One patient in whom the disease spread rapidly became pregnant within two months after the first symptoms of tuberculosis. Five of the twelve patients developing tuberculosis during pregnancy were pregnant for the first time. Of this group nine have died. Those women who developed disease within a year or during pregnancy have had the highest mortality, while those whose disease did not occur until several years after delivery have a death rate approximating that of the group with no maternal histories. There have been comparatively few deaths also in those women whose symptoms of tuberculosis developed after a spontaneous abortion or miscarriage. Of the ten patients having symptoms of tuberculosis within one year after a miscarriage, only one has died.

New England Journal of Medicine, Boston

200: 575-632 (March 21) 1929

*Surgical Procedures on Stomach and Duodenum. R. H. Miller, Boston.—p. 575.
Selection and Management of Patients for Gastric Surgery. H. M. Clute, Boston.—p. 580.
*Perforated Ulcers of Stomach and Duodenum: Fifty Cases. W. R. Morrison, Boston.—p. 584.
*Late Results of Operation of Gallbladder Disease: 109 Cases. G. A. Marks, Brookline, Mass.—p. 587.
*Lumbosacral Backache. C. E. Ayers, Worcester, Mass.—p. 592.
*Tuberculosis of Spine: Fusion of Vertebral Bodies. H. Ragolsky, Middleboro, Mass.—p. 608.

Surgical Procedures on Stomach and Duodenum.—Whatever may be the remote causes of peptic ulcer, the factor which in Miller's opinion must be given most consideration is the disturbance of balance between the acid stomach secretion and the alkaline duodenal contents. Any operation for ulcer must, to be successful, result in proper alkalization of the stomach contents. Physicians must stop talking about ulcer, without a qualifying adjective, designating either duodenal ulcer, meaning a benign lesion, or gastric ulcer, meaning a possibly malignant lesion. For simple duodenal ulcer gastro-enterostomy is the most satisfactory operation, and, except in unusual cases, extensive resections cannot be recommended. Local excision, however, is an operation of merit. Gastric ulcer should be treated as a precancerous lesion, and should be excised. The type and extent of the operation depends on the individual case.

Perforated Ulcers of Stomach and Duodenum.—In the series of fifty cases analyzed by Morrison, there were nine deaths, a mortality of 18 per cent. Eight of the nine patients died following suture of the ulcer only. In five of these patients the abdomen was drained; in the others it was not drained. Two of these patients died of pneumonia; two were elderly patients with chronic heart lesions, dying on the seventh and tenth days, respectively, following operation; two patients died of evisceration on the tenth and twelfth days; one of these had had a gastro-enterostomy performed. Thirty-three posterior gastro-enterostomies were performed; all the patients recovered except one, who died on the tenth day following exisceration, caused by too early removal of sutures. In twenty-nine patients the abdomen was sutured without drainage; twenty-one had drainage of the abdomen, most of these being Morrison's earlier patients. The ages of these patients varied from 23 to 72 years. The interval between perforation and operation ranged from three to twenty-four hours. Morrison has recently interviewed twenty-five of these patients personally, and has found that practically all have gained in weight, and have few or no symptoms at present.

Late Results of Operation of Gallbladder Disease.—Tuberculosis and cancer were each found in 6.4 per cent of the family histories of 109 patients with gallbladder disease whose condition was analyzed by Marks. Seventy per cent of the patients had undergone previous operation of some kind.

Typhoid was found in 11 per cent of the past histories. Gallstones were noted as present in eight patients at previous operations. Ninety-two per cent of the patients were married; 83.5 per cent had had children; 18.7 per cent of the onsets of disease were related definitely to a pregnancy. Nine patients operated on had not had any gallbladder symptoms, coming to operation for other reasons; 58.7 per cent had the chief location of pain in the right upper quadrant; 26.6 per cent in the epigastrium, and 10 per cent in the right lower quadrant (three of these had had previous appendectomy). Thirty-four per cent had a history of severe chronic constipation; 40.3 per cent gave a history of jaundice. Right upper quadrant tenderness was present in thirty-seven patients on preoperative examination. Eighty-eight per cent of the gallbladders were found to be grossly pathologic at operation, with palpable stones in 65 per cent; 15 per cent had stones in the cystic duct, 4.4 per cent in the common duct, and 1.8 per cent in the hepatic duct. Only 33 per cent with stones in the cystic duct had jaundice; 40 per cent with common duct stone had jaundice; four patients with stone in the cystic duct and one patient with stones in the common, cystic and hepatic ducts had no gallbladder symptoms. Cholecystectomy with drainage was performed in sixty-two patients, and without drainage in thirteen. Cholecystostomy with drainage was performed in twenty-six, without drainage in three. There were no operative deaths among the 109 patients. Eighty per cent had uneventful convalescences. Complete relief from symptoms was reported by 60.8 per cent of patients, more among those with cholecystectomy than cholecystostomy. Twenty-eight per cent have occasional digestive upsets, and 11 per cent report recurrence of typical gallbladder attacks. Inability to eat certain foods, especially fats and fried foods, was reported by 19 per cent. Five per cent have symptoms probably due to obstructing adhesions. Twenty-five patients report a gain in weight of from 10 to 65 pounds (4.5 to 29.5 Kg.).

Lumbosacral Backache.—It is shown by Ayers that the fifth lumbar root lies in such a position as to make it particularly susceptible to compression, injury and inflammation. It is also demonstrated that the distribution of the fifth nerve is such as to communicate pain to the areas which are pathognomonic of trouble in the lumbosacral region. Of a series of thirty-six patients with low back pain, twenty-seven have also complained of sciatica. Roentgen examination has shown in twenty-six of the thirty-six patients a greater or lesser degree of destruction of the cartilaginous disk between the fifth lumbar vertebra and the sacrum, as well as an arthritic involvement of the lumbosacral facets, an arthritis of the facets alone in nine cases, and, in one case, sacralization of the fifth lumbar vertebra on both sides, with the facets between the fourth and fifth lumbar vertebrae anterior in character. In no case was there thinning of the cartilage if the facets were in good condition. This would seem to be evidence that the arthritis precedes the chondritis. A study of the anatomy of the region has established the close relationship between the fifth nerve and the lumbosacral cartilage and lumbosacral articular facets. It is therefore patent that any destructive process that affects the cartilage or facets may be communicated in effect to the fifth lumbar nerve. The logical treatment is immobilization, and operative immobilization by means of the Hibbs fusion method has given wholly satisfactory results.

Tuberculosis of Spine; Fusion of Vertebral Bodies.—The ideal end-result or cure in the treatment of spinal tuberculosis in Ragolsky's opinion is reached when there is definite bony fusion of the affected vertebral bodies. In order to attain this goal, prolonged, uninterrupted recumbency is imperative. By conservative therapy, vertebral fusion takes place sooner, and is surer, than through operative measures.

200: 633-686 (March 28) 1929

*Aseptic (Lymphocytic) Meningitis: Three Cases. H. R. Viets and J. W. Watts, Boston.—p. 633.
Undernourished Child: Results of Convalescent Care. T. S. Wilder, Philadelphia.—p. 634.
Some Aspects of Physiology of Muscular Exercise. A. V. Bock, Boston.—p. 638.
Proper Standards for Production and Shipment of Milk. E. A. Crossman, Boston.—p. 660.

Aseptic Meningitis.—These three patients entered the hospital with a complaint of severe headache and vomiting, had a course of disease of a subacute nature with moderate fever, and all recovered. Viets and Watts assert that clinically the condition was characterized by the symptoms of a mild meningitis and by the presence of lymphocytes in the spinal fluid without polymorphonuclear cells or organisms.

Philippine Islands M. Assoc. Journal, Manila

9: 43-86 (Feb.) 1929

Are Filipinos Undernourished? I. Concepcion.—p. 43.
Activities in Maternity and Child Welfare Work in Province of Cebu. D. Belmonte.—p. 56.
Omnadin in Whooping Cough. R. Ozynula.—p. 61.

Physical Therapeutics, New York

47: 153-214 (March) 1929

Nonsurgical Goiter. I. Bram, Philadelphia.—p. 153.
Surgical Aspect of Exophthalmic Goiter. F. H. Lahey, Boston.—p. 166.
Thyrotoxicosis. H. G. Wahlig, Seacliff, N. Y.—p. 180.
Autonomic System. J. Hunter, Toronto.—p. 185.
Second International Congress of Radiology, Held in Stockholm, Sweden. N. E. Titus, New York.—p. 189.
Aspects of International Light Congress at Lausanne, 1928. M. E. Fries, New York.—p. 192.

Public Health Reports, Washington, D. C.

44: 579-636 (March 15) 1929

Rat-Flea Survey of Port of Norfolk, Va. H. E. Hasseltine.—p. 579.
Endemic Typhus Fever of Southeastern United States: Reaction of Guinea-Pig. K. F. Maxcy.—p. 589.

44: 637-694 (March 22) 1929

Trachoma Survey of Twenty-Nine Public Schools on or Near Indian Reservations in Montana. J. H. Crouch.—p. 637.
Sanitary Engineering Courses of Engineering Colleges of United States. I. W. Mendelsohn.—p. 645.

44: 695-762 (March 29) 1929

Leprosy in the United States. R. Hopkins and O. E. Denney.—p. 695.

South Carolina M. Assoc. Journal, Greenville

25: 343-374 (March) 1929

Specialty of Urology. M. Weinberg, Sumter.—p. 345.
Pediatric Consideration of Acute Otitis Media in Infants. C. W. Bailey, Spartanburg.—p. 347.
Nutrition of Infants and Preschool Children. W. Weston, Jr., Columbia.—p. 351.
Physiology of Liver and Clinical Applications. J. Van de Erve, Charleston.—p. 354.

Surgery, Gynecology and Obstetrics, Chicago

48: 449-576 (April) 1929

*Primary Nerve Tumors of Neck and Mediastinum: Three Cases. G. W. Crile and R. P. Ball, Cleveland—p. 449.
*Importance of Vessels in Round Ligament to Head of Femur During Period of Growth: Relation to Perthes' Disease. A. P. Zemansky, Jr., and R. K. Lippmann, New York.—p. 461.
*Changes in Intestinal Flora After Gastro-Enterostomy and Partial Gastrectomy. B. Portis, Chicago.—p. 470.
Aberrant Blood Vessels as Factor in Lower Ureteral Obstruction. J. A. Hyams, New York.—p. 474.
*Value of Liver in Treatment of Anemia Due to Hemorrhage. W. P. Murphy and J. H. Powers, Boston.—p. 480.
Technic of Left Epinephrectomy. E. Stulz and P. Stricker, Strasbourg, France.—p. 487.
Russell's Operation for Cure of Oblique Inguinal Hernia. A. Newton and H. Searby, Melbourne, Australia.—p. 491.
*Retrograde Dilatation of Esophagus for Cardiospasm. E. S. Judd, P. P. Vinson and D. P. Greenlee, Rochester, Minn.—p. 494.
Excision of Thyroid Isthmus for Relief of Pressure. F. H. Lahey, Boston.—p. 498.
*Trisacral Fusion: Operative Technic Facilitating Combined Ankylosis of Lumbosacral Joints of Spine and Sacro-Iliac Joints. F. A. Chandler, Chicago.—p. 501.
*Results of Treatment of Tumors of Branchiogenic Origin. B. F. Schreiner, Buffalo.—p. 507.
Congenital Valvular Obstruction of Prostatic Urethra. H. H. Young and R. W. McKay, Baltimore.—p. 509.
*Surgical Treatment of Undescended Testicles. C. C. Higgins, Cleveland, and H. Welti, Paris, France.—p. 536.
Carcinoma of Male Urethra: Case: Technic of Penis Extirpation. C. B. Huggins and G. M. Curtis, Chicago.—p. 544.
Fascia Lapping as Applied to Tissue of Vaginal Wall: A Misnomer. D. Bissell, New York.—p. 549.
*Use of Secondary Suture in Civil Practice. M. M. Zinninger, Cincinnati.—p. 551.
Hemangioma of Kidney: Case. H. H. Gile, New York.—p. 555.
Tumor (Adenoma) of Paratyphoid Glands: Case. C. C. Guy, Chicago.—p. 557.

Primary Nerve Tumors of Neck and Mediastinum.—Three primary nerve tumors in the neck and mediastinum are reported by Crile and Ball and an analytic chart of sixteen

similar cases reported in the literature is offered. These tumors are believed to arise from cells which have migrated from the ganglionic crest with the ganglions. Only tumors of the earliest undifferentiated type are ever malignant, and this type tends to become increasingly differentiated until it reaches the adult stage, when it becomes a benign type of tumor. Diagnosis is difficult, but if the tumor is definitely located and the duration of the symptoms is considered, a correct diagnosis is more likely to be made. Early diagnosis and immediate removal of the tumor are indicated because of the tendency of the neoplasm to continue to enlarge, to envelop surrounding structures, and to metastasize, if it is a tumor of the undifferentiated type.

Importance of Vessels in Round Ligament to Head of Femur During Growth.—On the basis of their annual experiments, Zemansky and Lippmann conclude that the vessels of the round ligament are essential, at least in rabbits, for the normal development of the femoral head; and that interference to the circulation through them at an early age produces an anemia of the weight-bearing portion of the capital nucleus, which, in turn, causes bone and marrow necrosis with ensuing secondary deforming changes. These studies have also demonstrated that, as adolescence progresses, the importance of these vessels gradually diminishes until the epiphysis unites with the shaft, at which time, in normal animals, the vessels no longer carry blood into the femur and the nutrition of the crest is derived entirely from below. Zemansky and Lippmann believe it is reasonable to suppose that a similar replacement occurs in man at the same relative age period; i. e., the period during which Perthes' disease appears. If this supposition is correct it is not unlikely that the immediate cause of the disease lies in some maladjustment of the delicate physiologic balance that must exist between these sources of nutrition to the crest of the femoral head.

Changes in Intestinal Flora After Gastro-Enterostomy and Partial Gastrectomy.—Portis found that the upper intestinal flora of dogs is markedly changed after subtotal gastrectomy and gradually assumes the fecal character of the lower intestine. Gastro-enterostomy does not materially alter the bacterial flora of the intestinal tract. The author feels that alteration in intestinal flora after the partial removal of the stomach is probably due partly to the loss of the bactericidal activity of the stomach through the establishment of an achlorhydria, partly to the more rapid emptying time of the stomach, and, finally, that the alkaline medium of the jejunum greatly predisposes to the further multiplication of its bacterial content. A clinical deduction may be drawn in that, although partial gastrectomy seems to be the best operation in certain cases of ulceration of the stomach and the duodenum, a new factor is introduced with the fecal change of the upper intestinal flora.

Value of Liver in Treatment of Anemia Due to Hemorrhage.—The effect of liver together with a well balanced diet on the blood of patients with anemia due to hemorrhage was observed by Murphy and Powers in seventeen surgical patients. Eleven of these patients received from 180 to 240 Gm. of prepared beef or calf's liver daily, at least 300 Gm. of green vegetables, an equal amount of fruit, and about 100 Gm. of red muscle meat. The remaining six patients received in addition large doses of iron in the form of pills of ferrous carbonate (0.9 to 1.8 Gm.) or reduced iron (4 Gm.) daily. As a control a record was made of the changes in the blood of seven essentially comparable patients who did not receive any liver or iron. These patients were given the regular hospital diet which contained the usual amount of meat and 150 Gm. of green vegetables daily. After admission to the hospital each patient remained in bed during the first two weeks of observation. Dietary treatment was not instituted until all bleeding had ceased. Except in cases of emergency requiring immediate operative intervention, surgical treatment was deferred until after improvement had been observed under the new dietary regimen. The seventeen patients treated with liver or liver and iron showed a definite increase in both hemoglobin and red blood corpuscles in all except three cases. The patients treated with liver and iron had a greater increase in hemoglobin than did those treated with liver. Those patients receiving liver who were followed from one to four months continued to show improvement comparable to that observed during the first two weeks, with the exception of two patients, whose percentage of hemoglobin remained persistently low.

Retrograde Dilation of Esophagus for Cardiospasm.—Judd et al. report two cases in which manual dilation of the cardia through the stomach was resorted to. Failure to dilate the esophagus from above was due to marked angulation of the lower portion of the organ. In one case in which there was recurrence of symptoms following manual dilation from below, the contour of the esophagus had been altered sufficiently to permit hydrostatic dilation from above.

Trisacral Fusion.—A new operative technic for the combined stabilization of the sacro-iliac and lumbosacral joints is described by Chandler. The immediate results in a series of five cases are such as to warrant the more extensive trial of this procedure as a means of relieving low back and sciatic pain.

Results of Treatment of Tumors of Branchiogenic Origin.—Among 7,376 cases analyzed by Schreiner there occurred eighteen cases of tumors which he believes were of branchiogenic origin. Two of these were benign and sixteen were epithelioma (squamous cell carcinoma), making the incidence of malignancy 0.2 per cent. They all were of exceedingly rapid growth, during which time some of them were suspected to be of an inflammatory nature and were dealt with by incision to evacuate a supposed abscess. Fifteen of these cases occurred in males, one in a female. Two gave a positive blood Wassermann reaction. An hereditary history of cancer was obtained in two cases and in one case the wife had died many years before of cancer of the uterus. There was no history of trauma. These patients complained of pain or stiffness in the neck, and swelling which had existed from a few weeks up to one year. In two instances the patient gave a history of a swelling which grew rapidly, then subsided somewhat and was followed by another period of rapid growth. At the time of admission, seven patients had ulcerating masses and three had brawny, hard or indurated masses with areas which felt cystic. The tumor occurred on the right side of the neck twelve times, on the left side four times, occupying sites from the angle of the jaw to the clavicular insertion of the sternocleidomastoid muscle. The submaxillary region and the middle third of the sternocleidomastoid muscle seem to be the most common sites. Before admission these patients were subjected to operation in five instances, and to incision for the evacuation of pus on two occasions. Plasters, poultices, and roentgen irradiation had been given in six cases. In cases which came to necropsy metastases were noted in the regional lymph nodes and mediastinal nodes on one occasion. Two patients who had branchiogenic cysts are alive and well as the result of operation. Among the sixteen malignant cases, the tumor mass was removed in five; in two it had been incised by the family physician for supposed abscess, and in all the remaining cases biopsy was performed. No apparent clinical cures have been effected by any form of treatment in these cases.

Surgical Treatment of Undescended Testicles.—Higgins and Welti describe in detail Ombrédanne's technic for orchidopexy, and review the literature.

Use of Secondary Suture in Civil Practice.—Secondary closure is recognized by Zinninger as a valuable procedure, especially in certain types of cases: (*a*) traumatic amputations; (*b*) amputations for severe infection; (*c*) for closing infected wounds and abscess cavities. The procedure gives better functional results than does skin grafting.

Tennessee State M. Assoc. Journal, Nashville

21: 411-450 (March) 1929

State Care of Mentally Abnormal. D. H. Keller, Bolivar.—p. 411.
Vomiting of Pregnancy. J. B. Haskins, Chattanooga.—p. 416.
Prophylaxis, or Preventive Medicine. E. M. Everett, Memphis.—p. 420.
Vision of Babies and Young Children: What May Be Accomplished by Careful Examination and Treatment. B. F. Royer, New York.—p. 421.
First Aid to Injured. J. M. Clack, Rockwood.—p. 425.
Shock. C. D. Robbins, Gallatin.—p. 427.
Interpretation of Perimetric Findings. J. B. Stanford, Memphis.—p. 429.

Texas State J. Medicine, Fort Worth

24: 731-812 (March) 1929

Foreign Bodies in Lung and Esophagus: Fifty-Two Cases. G. S. McReynolds, Temple.—p. 739.
Surgical Treatment of Brain Injuries Associated with Epilepsy. C. H. Harris and G. R. Enloe, Fort Worth.—p. 747.

Standardization of Certain Biologic Products. R. E. Dyer, Washington, D. C.—p. 752.
*Incidence of Syphilis in Tuberculosis Clinic. A. E. Greer, Houston.—p. 756.
*Hydrogen Sulphide Poisoning in Texas. C. M. Aves, Houston.—p. 761.
Study of End-Results: Needed Service. F. L. Barnes, Houston.—p. 766.
Fractures of Humerus in Upper Third. J. H. Dorman, Dallas.—p. 769.
*Sphenopalatine Ganglion Neurosis: Sixty-Eight Cases. E. P. Hutchings, Marlin.—p. 771.
Remembering Sphenopalatine Ganglion. C. B. Williams, Mineral Wells.—p. 773.
Uterine Bleeding. A. Antweil, Fort Worth.—p. 776.
Chronic Endocervicitis: Complications and Treatment. A. G. Cowles, San Antonio.—p. 779.
Roentgen-Ray and Galvanic Treatment of Menorrhagia and Metrorrhagia: Six Cases. S. D. Whitten, Greenville.—p. 781.
Need of Standardized Food Control in Texas. T. E. Tabb, Waco.—p. 783.
Educating Public and Physicians About Public Health Matters. J. A. Flautt, Galveston.—p. 784.

Incidence of Syphilis in Tuberculosis Clinic.—Among 817 patients with syphilis, Greer found 432 cases of tuberculosis. There was a greater relative number of positive Wassermann reactions in the tuberculous patients than in the nontuberculous individual.

Hydrogen Sulphide Poisoning in Texas.—In the development of the Texas oil industry, poison gas was encountered. On investigation the oil was found to contain hydrogen sulphide. No uniformity in the percentages of the hydrogen sulphide gas has been found according to Aves. The concentration of the gas in ten adjoining wells on a 160-acre lease ranged from 4 to 14 per cent, with no two alike. When it is known that life can be sustained for only a short period of time in concentrations of 0.15 per cent (1,500 parts per million), the seriousness of the safety hazard encountered is plainly evident. All natural life has disappeared in the oil fields. There is a noticeable absence of birds and rabbits. It is not uncommon to find dead animals within the fire walls. The most dangerous time is when a well is being brought in. All fires are necessarily put out in the area and the gas simply must flow. Also in the early morning hours, when the air is quiet and contains more moisture, the gas clings to the ground and there is less dilution by the air currents. Men have been overcome working at the well, working leeward to the well, and working in a ravine where the gas was flowing like water. Also, while gaging tanks, men have been found unconscious on the tanks or, having been rendered unconscious, have fallen off. One case was reported in which a man was rendered unconscious while driving a car through a tank farm; the car passed out of the path of the gas before coming to a stop, and the man regained consciousness. Men have been overcome while repairing leaks in the pipe line, and while working at the refineries. A sudden shift of the wind killed all the mules in a corral, as the gas moved in their direction. The deaths in Texas, in the past two years, from hydrogen sulphide poisoning have been estimated at from fifteen to thirty; at least three or four times that many persons have been rendered unconscious and have recovered. Locally the gas has a noticeable effect on minor skin wounds. Men working in very low concentrations of the gas, that is, low enough for the gas to have an odor, experience a marked failure of small abrasions and lacerations to heal. These will often not heal until a gastight dressing (oil-silk or waxpaper about the dressing) is applied. There are apparently two different effects on the eyes. In low concentrations over a considerable period of time there is an irritative reaction with conjunctivitis, marked injection, lachrimation and photophobia. The other reaction occurs when the eyes suddenly come in contact with a very heavy concentration, as when a well "blows in." The sensation experienced, as explained by the men, is as though the eyes had suddenly been filled with very sharp sand. The reaction is extreme, with very severe swelling of the conjunctiva, to such an extent as to evert both lids. Recovery is fairly rapid and usually complete. Rarely the cornea will develop an ulcerative condition. The other mucous membranes do not react with any similar inflammation. In fact, colds are infrequent, and aside from a dry throat there are no complaints. The more acute form of hydrogen sulphide poisoning is manifested by an apoplectiform type, with complete paralysis of the central nervous system. The victims are in a very concentrated gas and collapse is sudden and complete. A second type, a slightly less acute form, is accompanied by asphyxia with paralysis of respiration, in which the heart continues to beat. Death will result in a very short time unless respiration is assisted and intensive treatment started. A third type of poisoning is seen in cases in which death occurs from pulmonary edema or bronchopneumonia. The chronic type of hydrogen sulphide poisoning, as described in textbooks, is hardly encountered in the oil fields. A state of nervous depression is occasionally seen, but is more of the type of shellshock.

Sphenopalatine Ganglion Neurosis.—In the sixty-eight cases of true sphenopalatine ganglion neurosis reported on by Hutchings, local applications of a 2 per cent solution of mercurochrome over the ganglion have given very satisfactory results in 73 per cent of the cases.

U. S. Veterans' Bureau M. Bull., Washington, D. C.

5: 247-322 (April) 1929

Variations in Intrapleural Pressure as Modified by Pathology. W. H. Watterson.—p. 247.
Beneficial Effect of Pyrexia on Syphilitic Transverse Myelitis. A. B. Musa.—p. 255.
Malta Fever Occurring Among Personnel in United States Veterans' Hospital, Knoxville, Iowa. C. A. Kearney.—p. 259.
Human Infection by Bacillus Abortus and Related Organisms. L. C. Elledge.—p. 263.
Julius Caesar, Epileptic. W. Y. Seymour.—p. 266.
Intestinal Tuberculosis in Adults. H. A. Callis.—p. 273.
Seasonal Treatment of Hay-Fever. E. A. Gatterdam.—p. 276.
An Aid to Reflective Thinking: Tuberculosis Clinical Data Chart. J. W. Turner.—p. 279.
*Hypoglycemia in Allergy. J. T. Malone.—p. 285.
Various Types of Bridge Attachments and Construction. C. R. Blais.—p. 289.
Rupture of Spleen During Antisyphilitic Malarial Treatment. F. C. Robbins.—p. 291.
Healed Miliary Tuberculosis. H. E. Mason.—p. 295.
Lepra Anesthetica: Isolated Case. W. M. Bevis.—p. 297.
Case of Systemic Blastomycosis. B. S. Compton.—p. 299.

Hypoglycemia in Allergy.—Low blood sugar values were obtained by Malone in fifteen cases of allergic bronchial asthma associated with a suspected food allergy. The hypothesis of an altered internal secretion of the pancreas resulting in a disturbance of carbohydrate metabolism has been suggested as an etiologic factor in certain allergic manifestations. Experimental research has proved that the administration of endocrine preparations has a definite effect on carbohydrate metabolism. The suggestion is advanced that an undetected liver hormone may, perhaps, be involved in the complex etiology of allergic manifestations.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Urology, London

1: 1-124 (March) 1929

*Drainage of Bladder Through Perineum After Suprapubic Prostatectomy. A. Fullerton.—p. 7.
*Improved Method for Titrating Sugar in Urine and Blood. P. J. Cammidge and H. A. H. Howard.—p. 17.
Urology in Relation to Gynecology. V. Bonney.—p. 23.
*Routes of Absorption in Hydronephrosis; Experimentation with Dyes in Totally Obstructed Ureter. D. M. Morison.—p. 30.
Pyelographic Diagnosis of Renal Tumor. R. G. Craig and R. K. Lee-Brown.—p. 46.
Surgical Aspects of Polycystic Disease of Kidney. M. Meltzer, New York.—p. 54.
*Afterhistory of Case of Nephrectomy for Polycystic Kidney. H. T. Mursell.—p. 64.
End-Result of Traumatized Kidney. R. J. Willan.—p. 69.

Drainage of Bladder Through Perineum After Suprapubic Prostatectomy.—The operation Fullerton now performs is carried out as follows: An incision 1¼ inches in length is made in the perineum on one side, parallel to the ischiopubic ramus, and crossing a transverse line from the bulb to the anterior part of the tuberosity of the ischium. The incision involves the skin only. The index finger of one hand is now introduced, feels for the base of the triangular ligament, and, passing deep to this and forward, reaches the prostate. In doing so it passes superficial to the levator ani muscle. The length of the track so made is about 2 to 2½ inches, in an average subject. A plug of gauze is now temporarily packed into the wound and the patient is placed in position for suprapubic prostatectomy, which is carried out in the usual way. With one index finger in the prostatic cavity and the other in the perineal wound, the surgeon estimates the thickness of

the septum to be traversed by the forceps. It is readily perforated by long forceps, and a drainage tube one-half inch in diameter is drawn through. The only structures involved are the skin of the perineum, the ischiorectal fat and that portion of the pelvic fascia which forms the sheath of the prostate. The levator ani muscle is not touched.

Improved Method for Titrating Sugar in Urine and Blood.—Instead of using a standardized solution of sodium thiosulphate, which rapidly deteriorates on keeping, for estimating sugar in the urine, Cammidge and Howard use a tenth-normal standard arsenous acid solution with the standard copper solution and 30 per cent dilute sulphuric acid. For the estimation of sugar in blood, a 10 per cent sodium tungstate solution, two-thirds-normal sulphuric acid, two-hundredth-normal arsenous acid solution, and a standard copper solution are used. Both methods are described in detail.

Routes of Absorption in Hydronephrosis.—With a view to determining the routes of absorption in hydronephrosis, dyes were introduced by Morison into the renal pelvis in amounts well below the total pelvic capacity. Two routes of absorption were noted, i. e., lymphatic and tubular. At the outset of complete ureteral obstruction there ensues for the first two or three days a purely lymphatic absorption from the walls of the renal pelvis and ureter. After about the third day tubular absorption commences and continues more actively than the lymphatic. Even a short period of "back pressure" favors tubular absorption. The convoluted tubules of the peripheral glomeruli are the first to take on this function, and as pressure atrophy progressively supervenes, the subjacent layers continue the process of reabsorption. In thus absorbing dye mediums, the cells of the convoluted tubules may be demonstrating a slightly altered normal function. If so, their action would tend to favor the "filtration and reabsorption" theory of renal secretion. The impression is obtained that "pyelovenous backflow" is probably due to trauma, and cannot accordingly be regarded as a usual factor in the mechanism of hydronephrosis.

Afterhistory of a Nephrectomy for Polycystic Kidney.—Mursell's patient complained of a pain in the back, not severe as a rule, which came on after working for several hours. It was relieved by rest, although the sense of stiffness remained, chiefly over the crest of the ilium. In addition, he had at times severe headache. There was not increased frequency of micturition. There had been profuse hematuria on several occasions. A mass moving with respiration was visible on inspection of the abdomen on the left side and was due to a large kidney extending from the left hypochondrium downward into the pelvis and reaching to the midline. On palpation this mass gave a feeling of elasticity with some irregularity. Cystoscopy did not reveal any abnormality in the bladder. Double ureteral catheterization gave a free secretion of an apparently normal urine from the right side and a less free secretion from the left. Indigo carmine injected intramuscularly was excreted from the right side in seventeen minutes and from the left side in forty minutes. A pyelogram of the left side showed a marked filling defect, with a long narrow pelvis, the ureter emerging from the central portion of the pelvis. The diagnosis made was "renal growth." In view of the urine from the right side indicating a functionally active kidney, left nephrectomy was done. A large polycystic kidney was removed. The patient made an uneventful recovery and returned to his work in due course. He has been working regularly and in sound health ever since.

Journal of State Medicine, London

37: 187-248 (April) 1929

Lead Poisoning in Industries. T. Oliver.—p. 187.
*Rheumatism in Relation to Industry. R. F. Fox.—p. 196.
Industrial Diseases as Viewed from Standpoint of Medical Officer of Health. E. W. Hope.—p. 210.
Humor and Pathos of Tuberculosis Campaign. Marchioness of Aberdeen and Temair, J. P.—p. 221.
Grading of Milk. J. McAllan.—p. 229.

Rheumatism in Relation to Industry.—During the last few years preliminary statistics have been published in the northern countries of Europe showing the prevalence of rheumatic disease in the industrial population. The official statements give enormous figures representing disablement and financial loss entailed by rheumatism on insured persons in industry. For example, says Fox, in England alone, for the year 1927, it is estimated that 5,500,000 weeks of working time were lost in a population of 16,000,000 insured persons, and that the sickness and disablement allowances amounted to £5,000,000. To this cost in allowances on account of rheumatic disease must be added £12,000,000 for lost wages in 1927. This altogether amounts to the incredible figure of £17,000,000 as a yearly expenditure or loss on account of rheumatism, and this is for the insured population only.

Lancet, London

1: 645-696 (March 30) 1929

Polyuria: II. Experimental Reduction of Renal Tissue. E. B. Verney.—p. 645.
*Postoperative Gastric Acidity. E. C. Lindsay and W. Evans.—p. 651.
*Chordotomy: Section of Anterolateral Tracts for Relief of Pain: Seventeen Cases. G. F. Stebbing.—p. 654.
Active Immunization and Diphtheria. P. M. May and S. F. Dudley.—p. 656.
Induction of Abortion from Psychiatric Standpoint. B. Hart.—p. 658.
*Viscid Blood and Hyperglycemia in Diabetes Mellitus. A. M. Kennedy.—p. 660.
Infection with Bacillus Morbificans-Bovis (Basenau). S. H. Warren.—p. 600.

Postoperative Gastric Acidity.—A study was made by Lindsay and Evans of sixty cases in which gastrojejunostomy had been performed for the cure of a chronic duodenal ulcer. The gastric acidity was estimated after the Ewald test meal. The interval between the preoperative test meal and the operation varied usually from one to seven days. The early postoperative test meal was taken about fourteen days after the operation and immediately before the patient's discharge from hospital. The late postoperative test meal was carried out from six months to eight years after the operation. Free hydrochloric acid was absent in the early test meal but present in the late postoperative specimen in fifteen cases. Free hydrochloric acid was present in both postoperative test meals in twenty-five cases. Free hydrochloric acid was absent in both early and late postoperative test meals in eleven cases. Free hydrochloric acid was present in the early and absent in the late postoperative test meal in nine cases. This investigation seems to indicate that gastrojejunostomy produces "temporary achlorhydria" in 25 per cent; "persistent achlorhydria" in 18 per cent, and "delayed achlorhydria" in 15 per cent of cases. Alkali therapy does not produce any permanent reduction in the gastric acidity value as shown by the Ewald test meal either before or after operation. No definite relationship was found to exist between the intake of alcohol and the acidity value.

Section of Anterolateral Tracts for Relief of Pain.—Section of the anterolateral tracts of the spinal cord for the relief of pain was performed by Stebbing on seventeen patients. Eleven were suffering from inoperable carcinoma of the rectum or uterus, five from tabes dorsalis, and one from a painful stump following amputation through the hip joint, performed for sarcoma of the femur. The level at which the anterolateral columns were divided has varied with the disease from which the patient was suffering. In those who had carcinoma, the section was made opposite the sixth dorsal vertebra; in four patients who had gastric crises of tabes dorsalis the section was made opposite the third dorsal vertebra; in one who had lightning pains of tabes dorsalis in the lower limbs, the section was made opposite the fifth dorsal vertebra, and in the patient with causalgia the section was made opposite the sixth dorsal vertebra. In all the patients except the last mentioned the section was made on both sides of the cord. The operation was undertaken only in patients who had such severe pain that a major operation was justified for its relief. Only two died as a result of the operation. One died of pneumonia on the third day and the other, a woman, aged 73, with carcinoma of the cervix, died on the seventh day of paralytic ileus; after the operation she had no pain and no paralysis of the legs, although the knee jerks were absent; the plantar reflexes gave a flexor response, and she passed urine naturally. In two patients there was complete paralysis of the legs for a few days, and in several a paresis of the legs, sometimes lasting for two or three weeks. It was noted that this paresis was most marked and prolonged in those cases in which the cord had been most "handled," and in the later cases care was taken to touch the

cord as little as possible. There was sometimes complete relief from pain for many months, but in others the relief was only partial, and several patients stated that pain had gone from everywhere except a particular spot. In none of the surviving patients was there any permanent ill effect from the operation.

Viscid Blood and Hyperglycemia in Diabetes Mellitus.—The principal feature in Kennedy's case was the condition of the blood when the patient first came under observation. Its sugar content (754 mg. per hundred cubic centimeters) was exceptionally high, and this was associated with a dark, almost black, and thick, treacly condition of the blood. The patient was inclined to be drowsy but was not in actual coma, and she never had air-hunger. The lips were slightly cyanosed but there was no cyanosis of the extremities, engorged veins, or other external evidence of circulatory stasis. A very quick change of the blood to normal followed the giving of abundant fluid and insulin.

1: 697-750 (April 6) 1929

Medical Review of Surgery of Chest. R. A. Young.—p. 697.
*Phenylcinchoninic Acid (Cinchophen) in Treatment of Gout. G. Evans and A. W. Spence.—p. 704.
*Salivary Calculi and Their Treatment. C. P. G. Wakeley.—p. 708.
*Rôle of Hydrochloric Acid in Causation of Gastric Pain. T. L. Hardy.—p. 711.
Control Observation with "Sanocrysin." B. R. Clarke and H. G. K. Haddick.—p. 714.
Ulcerative Endocarditis of Tricuspid Valve. J. F. Wilkinson.—p. 716.
Leprous Lesions of Scalp. A. R. Davison.—p. 717.

Cinchophen in Treatment of Gout.—Evans and Spence review the literature on the treatment of gout with cinchophen and relate their own experience. They conclude that cinchophen is often invaluable in the treatment of chronic gout, and in certain cases of this disease a cure can be effected, or great alleviation of symptoms obtained, such as does not result from colchicum or from any other means. Toxic symptoms of any severity rarely occur, and by a knowledge of the proper use of the drug even these can be avoided. At the same time it must be clearly recognized that toxic symptoms due to cinchophen do sometimes occur, and after relatively small doses, in those who have an idiosyncrasy to the drug. Certain precautions should always be taken in prescribing cinchophen. A small initial dose should be given to test the patient's tolerance to the drug. It is given with water after meals, and if there is any symptom of gastric irritation, it is given with 15 grains (1 Gm.) of sodium bicarbonate (cinchophen and sodium bicarbonate cannot be prescribed in the same mixture). It is generally best given on three days in succession each week, but there are occasions in the authors' experience in which a smaller dose of cinchophen is more efficient and is well tolerated when distributed throughout the week. When nutrition is poor and there is a suspicion of poor glycogen reserves in the liver, an ample carbohydrate diet should be given. Finally, any person taking cinchophen must be under medical supervision, and with the appearance of symptoms of liver poisoning, of which a loss of appetite is the first, the drug should be stopped at once.

Salivary Calculi and Their Treatment.—An analysis made by Wakeley of the recorded cases of salivary calculi published up to the present time brings out the following figures: submaxillary gland and duct, 63.2 per cent; parotid gland and duct, 20.6 per cent, and sublingual gland and ducts, 16.2 per cent. As to the etiology of these calculi, Wakeley says that bacteria are nearly always found in their centers. It might be thought that bacteria were the actual cause of the calculus, but this certainly cannot be the case since, if infection alone were the important factor, calculi would occur more frequently in the gland and duct which are most often the seat of infection, namely, the parotid and its duct. Bacteria probably do play a part in the formation of calculi by decomposing the proteins in the saliva. It is a well known fact that if saliva is exposed to the air for a short period of time, carbon dioxide escapes from it and a thin film of calcium carbonate soon forms on the surface. Therefore the removal of carbon dioxide alone is sufficient to precipitate the calcium salts. When bacteria decompose the proteins in saliva, ammonia is produced and probably immediately unites with the carbon dioxide held in solution; thus a condition favorable for calculus formation occurs. If this is so, it is quite reasonable to conclude that bacteria cause, indirectly, a precipitation of the calcium salts of the saliva by increasing the alkalinity of the saliva and removing carbon dioxide.

Rôle of Hydrochloric Acid in Causation of Gastric Pain.—The view is put forward by Hardy that hydrochloric acid plays no essential part in ordinary pain production. Hydrochloric acid in concentrations of 0.5 per cent will produce typical gastric pain in certain susceptible persons suffering from painful disturbances of gastric function. The pain occurs independently of any local disease in the stomach or duodenum.

Practitioner, London

122: 137-204 (March) 1929

*Value of Sea Voyages in Health and Disease. D. J. P. McNabb.—p. 137.
*Id.: R. P. Stewart.—p. 143.
Id.: A. King.—p. 149.
*Id.: W. H. Allen.—p. 156.
*Id.: S. B. White.—p. 162.
Treatment of Cancer of Breast. D. C. L. Fitzwilliams.—p. 167.
Actinotherapy in Nervous Affections of Skin. W. J. O'Donovan.—p. 179.
Dental Infection. F. N. Doubleday.—p. 187.
Lichen Planus Ruber: Case. J. Burgess.—p. 196.

Value of Sea Voyages in Health and Disease.—McNabb says that from the point of view of healthy persons, there is no more reason why they should anticipate any bad result from a voyage across the Atlantic in a modern liner than from transferring from their own homes to a well appointed hotel for a similar period. With regard to those who are suffering from, or are convalescent from, various diseases, there are naturally many limitations. In the first place, he suggests as a general rule that where one would hesitate to transfer a patient from his home to a hotel (not a hospital), equally, if not more so, one should be deterred from transferring him to a ship. There are undoubtedly certain types of patients who respond satisfactorily to a sea voyage across the Atlantic, if they are in the medical officer's hands and treatment is watched and regulated from day to day. The first type is the patient in a condition of prolonged convalescence from influenza (catarrhal), with or without bronchopneumonia. Other types are those who have been harassed by business or other worries or who have been working under high pressure, with probably irregular meals and irregular sleep. These usually improve with the removal of the cause and the peacefulness of the routine on board. Those who suffer from gastric or gastro-intestinal abnormalities do not by any means respond so satisfactorily. In most cases they are addicted to overindulgence, for which they find ample scope on board, or else, through brooding on the subject, they become food faddists, and are unable to find anything on board to suit their disordered tastes. No doubt prolonged and hurried traveling with irregular meals and irregular opportunities for evacuation have contributed largely to this, but it is surprising how quickly they recover with regularized feeding and attention to normal functions. Very young children who are taken touring with their parents frequently suffer from this form of gastritis, but once on board and put under treatment they speedily recover. Alcoholic patients are entirely unsuitable for sea voyages.

Id.—It is Stewart's belief that those classes of cases in which there is undoubted benefit from any sea voyage are: 1. All postoperative cases, surgical cases generally, and particularly cases of chronic suppuration. 2. Cases of chronic nephritis and its sequelae and other kidney conditions in which the acute stage has been passed. These patients do particularly well because a warm, moist sea voyage induces profuse diaphoresis, and so relieves the kidneys. 3. Conditions allied to rheumatism, such as gout, lumbago and sciatica (provided drafts are avoided). 4. Bronchitis and other associated chest conditions. 5. Certain eye conditions, such as opacities in the vitreous humor, are undoubtedly lessened. Patients who rarely, if ever, benefit by a sea voyage and certainly not by going East are those with: (*a*) advanced pulmonary tuberculosis; (*b*) chronic dyspepsia, gastritis and suspected gastric and duodenal ulcers; (*c*) diabetes or other conditions requiring a rigid specialized diet; (*d*) the mentally deficient and markedly eccentric; (*e*) those addicted to the abuse of alcohol and drugs.

Id.—The contraindications given by Allen for a hot sea voyage are: (1) any tendency to epileptic or maniacal fits; (2) hemophilia, or an apt tendency to hemorrhage, menorrhagia

and epistaxis; (3) active pulmonary tuberculosis; (4) dilatation or weakness of the heart, with or without valvular disease; (5) enlargement of the liver due to dilated right ventricle; (6) skin diseases of an eczematous type or ringworm; (7) bronchiectasis; (8) eye conditions with a tendency to glaucoma; (9) bad neurasthenia with insomnia, claustrophobia, melancholia, or weak or unsound mind or eccentric habits; (10) unconquerable sea or train sickness; (11) arthritis and rheumatic conditions; (12) dipsomania.

Id.—White lays down the following rules in connection with sea trips: 1. Be careful to find out the sort of trip contemplated by the patient and prove its suitability or otherwise. 2. Find out whether the change of climate will be of benefit or otherwise. 3. Remember the tendency to overdo things on board ship and the ease of getting chills in tropical climates. 4. True sea-sickness is comparatively rare and experiments are being made to combat it. 5. Do not send to sea patients with active pulmonary tuberculosis or advanced neurasthenia bordering on melancholia, and be wary of sending those with advanced cardiac or kidney disease to the tropics.

Bruxelles-Médical, Brussels

9: 560-589 (March 17) 1929

*Insulin Treatment of Scleroderma. O. Michaëlis.—p. 560.
Distribution of Cancer in British Isles. E. Pittard.—p. 578.

Insulin Treatment of Scleroderma.—Michaëlis reports a case of generalized scleroderma in a woman, aged 30. After many kinds of treatment (including antisyphilitic treatment and opotherapy with various endocrine gland extracts) had proved of no avail, the author decided to try insulin, because the patient had had attacks of local asphyxia of the fingers (Raynaud's disease). Amelioration of the condition was observed after the first few injections and it progressed steadily notwithstanding many recurrences of the symptoms. In one year the patient received 4,970 units of various brands of insulin, combined with fifty ultraviolet irradiations, which were given during the last two months of the treatment. This improvement continued after the treatment had been stopped, so that the author anticipates a complete cure. The skin became soft and could be raised in folds on almost the whole body, and the patient could make many movements that had been limited or abolished before the treatment.

Bulletin de la Soc. d'Obst. et de Gynéc., Paris

18: 115-188 (Feb.) 1929. Partial Index

Pelvic-Abdominal Retroperitoneal Tumors. P. Petit-Dutaillis.—p. 115.
Spontaneous Rupture of Dermoid Cyst of Ovary. Lecène, Belot and C. Béclère.—p. 118.
Adnexal Reaction Following Intra-Uterine Injection of Iodized Oil. Lecène, Tedesco and C. Béclère.—p. 121.
Partial Symphyseotomy. Rudaux and Desnoyers.—p. 125.
Effect of Dengue on Pregnancy and Delivery. E. Hitzanidès.—p. 133.
Salpingitis in Dengue. E. Hitzanidès.—p. 137.
Recurrent Pyelohepatorenal Syndrome in Pregnancy. A. Fruhinsholz.—p. 141.
Postpartum Right Hemiparesis with Transient Aphasia. A. Fruhinsholz and L. Cornil.—p. 145.
*Effect of Spinal Anesthesia on Uterine Dilation. Binet.—p 148.
*Salpingectomy in Salpingitis in Early Pregnancy. Fruhinsholz, Hamant and Mosinger.—p. 150.
Contraindications for Irradiation Treatment of Fibromas. Reeb.—p. 153.
Postabortal Gangrene of Uterus. R. Keller.—p. 158.
Perforation of Cervix in Criminal Abortions. Daléas.—p. 162.
Vaccinotherapy and Diathermy in Gonorrheal Arthritis. Audebert and Planques.—p. 176.
*Effect of Spinal Anesthesia on Pregnant Uterus. J. Ducuing.—p. 179.

Effect of Spinal Anesthesia on Uterine Dilation.—Binet recommends the use of spinal anesthesia in curettage. In a case of postabortal retention of the placenta in a multipara, aged 32, with late occurrence of metrorrhagia, reported by him, the dilation of the cervix, for the exploration of the uterine cavity, was made easy and rapid by the use of spinal anesthesia.

Salpingectomy in Salpingitis in Early Pregnancy.—Fruhinsholz et al. practice systematic surgical intervention in cases of salpingitis during pregnancy because of the danger of a possible postpartum infection, which may be caused by the presence of an infected tube. They report a case of unilateral salpingitis which occurred in the second month of pregnancy in a multipara, aged 31; at laparotomy a pyosalpinx was excised under local anesthesia, and the woman made an uneventful recovery. Later, however, she had a miscarriage.

Effect of Spinal Anesthesia on Pregnant Uterus.—On the basis of numerous spinal anesthesias in pregnant women and of experiments on pregnant rabbits, Ducuing comes to the conclusion that the pregnant uterus behaves under spinal anesthesia as does the pregnant uterus in rabbits after complete section of the lumbar part of the spinal cord, which severs the connection of the uterus with the cerebrospinal system. The uterine contractions become violent (and painless), but the labor is never started by the spinal anesthesia. In sixty-two cases of spinal anesthesia in nonobstetric abdominal and other kinds of operations on pregnant women (as well in the early as in the late stages of pregnancy), the author never observed an interruption of the pregnancy. When spinal anesthesia is resorted to during labor, the propulsion of the fetus is slower than one would have expected in the presence of such violent uterine contractions. The cervix is relaxed to a certain degree, allowing a more or less easy and rapid dilation, but the relaxation of the cervix is never so complete as the relaxation of other sphincters during the same spinal anesthesia. Immediately after the expulsion or the extraction of the fetus, the uterus contracts well and remains well contracted throughout the puerperium; neither postpartum hemorrhages nor uterine colics were observed by the author. In cesarean sections the incision of the uterus is almost bloodless; the fetus is usually delivered easily and in good condition, and the puerperium is uneventful.

Bull. et Mém. de la Soc. Méd. des Hopitaux de Paris

53: 343-370 (March 18) 1929

Injection of Sodium Aurothiosulphate into Pleural Cavity in Artificial Pneumothorax. A. Jacquelin.—p. 343.
*Hereditary Multiple Osteogenic Exostoses. E. Apert and Peytavin.—p. 346.
*Thrombophlebitis and Infarct of Myocardium. P. Merklen and J. Albert-Weil.—p. 351.
Acetylcholine Treatment of Lead Colic. Laignel-Lavastine and J. Fouquet.—p. 360.
*Black Sputum in Tuberculosis. A. Jousset.—p. 363.
Blood Serum Changes in Eczematous Infants. L. Ribadeau-Dumas and M. Lévy.—p. 367.

Hereditary Multiple Osteogenic Exostoses.—Apert and Peytavin report two cases of this condition observed in children (brother and sister) whose mother had probably the same disease. The tuberculin test and the Wassermann reaction were negative. The exostoses had been observed in both children since early childhood (at 3 and 5 years) and were mistaken for rickets at first and for bone tuberculosis later, and were treated accordingly, without results. Not only were multiple exostoses observed on all bones, with the exception of the skull, face, clavicles, vertebrae and pelvis, but the upper part of the humerus, of the femurs and of the tibias was hypertrophied, and the ulnas were shortened and deformed. However, neither pain nor functional disturbances were caused by the bone disease, and the children were in good general condition.

Thrombophlebitis and Infarct of Myocardium.—Merklen and Albert-Weil report two similar cases of what they call "endovasculocarditis," characterized by infection of the whole vascular system: heart, arteries and veins. In the first patient (a man, aged 54) the disease began with three attacks of angina pectoris, with fever and symptoms of cardiac insufficiency. Two weeks later thrombophlebitis appeared in the left leg. No valvular disturbances were found on examination of the heart, but the patient died suddenly from heart failure. At necropsy, besides the lesions in almost all of the viscera, an extensive phlebitis of the femoral and saphenous veins on both legs and an infarct of the myocardium, caused by the obliterating coronary arteritis, were found, with a circumscribed endocarditis at its intracardiac side. In the second patient (a man, aged 36) the same attacks of angina pectoris were observed, with phlebitis in the left arm, obliterating arteritis in the right arm and pericarditis. The same triad of characteristic lesions of the endocardium, the arteries (arteritis of the left brachial artery and infarct of the myocardium due to obliterating coronary arteritis) and the veins was found at necropsy, besides the other visceral lesions. The authors think that the infection often may involve the whole intima of the vascular system (arteries, veins, endocardium) and that in the presence of a cardiac anginal syndrome with fever one should think of the possibility of the presence of some venous or arteriovenous infection.

Black Sputum in Tuberculosis.—Black discoloration of the sputum is often observed in pulmonary tuberculosis and is caused by the presence of flat alveolar epithelial cells containing some iron pigment. From 0.01 to 0.3 Gm. of iron was extracted from 100 Gm. of dried black sputum. This kind of sputum may be observed in any pulmonary congestion, but it is more pronounced in pulmonary tuberculosis because of the frequency of the hemorrhages (sometimes occult) in this condition. Jousset thinks that the black sputum is a sign of a good prognosis, because usually the degree of the black discoloration of the sputum is inversely proportional to the number of tubercle bacilli in it, and because the greatest number of the iron containing cells is observed in the chronic forms of pulmonary tuberculosis, with a slow evolution and a tendency to fibrosis.

Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

55: 275-329 (March 2) 1929

*Recurrent Seminoma. J. Berger.—p. 276.
Aberrant Tumor of Thyroid Gland with Disturbances of Vagus. Cornioley and Second.—p. 286.
Volvulus of Cecum. Hartglass.—p. 291.
Intestinal Intussusception in Infant, Cured by Operation and Hypertonic Salt Solution. P. Foucault.—p. 298.
Ulceration of External Iliac Artery Caused by a Drain (After an Appendectomy). C. Viannay.—p. 303.
Importance of Inferior-External Scapular Lymph Nodes in Cancer of Breast. G. Jeanneney.—p. 306.
Intravenous Injection of Camphor in Oil in Syncope During Spinal Anesthesia. Oudard.—p. 308.
Modification of Technic of Knee Resection. E. Juvara.—p. 311.
Surgical Treatment of Gonococcal Ostearthritis. Jeanneney and Foucault.—p. 313.
Splenectomy in Purpura Hemorrhagica in Child. R. Leriche and R. Horrenberger.—p. 320.

Recurrent Seminoma.—Berger reports a case of a recurrent seminoma in the right iliac fossa in a man who seven years previously had been operated on for a seminoma of the right testicle. Four years after the operation a painful tumor appeared in the right iliac fossa, just above Poupart's ligament, and half a year later the patient developed signs of acute suppurative appendicitis. The symptoms subsided under medical treatment in a hospital but reappeared a few months later. This time he was operated on for acute suppurative appendicitis, but at operation the appendix was found normal; a large fluctuating tumor of the right iliac fossa was punctured and drained, but not excised. The patient recovered in one month and is now (more than two years after the operation) in good general condition. Only traces of induration were found at the site of the former tumor. But in the pathologico-anatomic examination of a piece of the tumor secured at the last operation, it was found to be a recurrent seminoma. Therefore, the author thinks that the recovery of the patient is to be explained by the fact that the evolution of the tumor was checked by the acute inflammatory process present at the time of the last operation.

Paris Médical

1: 249-280 (March 16) 1929

*Etiology of Cancer. J. Maisin.—p. 249.
*Metabolism of Glucides in Cancer. J. Loiseleur.—p. 260.
Lead Treatment of Malignant Tumors. J. Lavedan.—p. 272.

Etiology of Cancer (Study of Experimental Cancers).—Maisin, director of the Louvain Cancer Institute, on the basis of his own numerous experiments on various kinds of animals and of a study of similar experiments in the literature, divides experimental cancers in two large groups: in the first the cancer remains localized, does not metastasize and, under favorable conditions, may even regress; in this group may be placed cancer of the gallbladder in guinea-pigs, produced by artificial, chemically inactive stones. In the second group, including cancers produced by tar, arsenic, parasites (*Gongylonema neoplasticum*) or roentgen rays, the cancer does not regress, may metastasize, and may be grafted. There exists a permanent or transient predisposition to the cancer, both local and general. Thus, for instance, tar may produce cancer easily in squamous stratified epithelium and only exceptionally in other types of epithelium, and certain races of rats are more susceptible to cancer than are others. The real nature of the predisposition to cancer is not yet known, but it is due to certain changes in the basal metabolism of the organism under the influence of some endogenous or exogenous factors. Thus, for example, castration accelerates the evolution of cancer and increases the malignancy (more metastases); the same effect is produced by ionium and tar. A specific pathogenic agent, similar to the filtrable virus of the Rous sarcoma, has not yet been found for cancer.

Metabolism of Glucides in Cancer.—Studying the glucide metabolism of cancer cells, Loiseleur comes to the conclusion that the increased amount of glycogen in the cancer cells seems to be closely related to the malignancy of the tumor, and that the cancer cells decompose dextrose into lactic acid at a considerably higher rate than the normal cells do; thus in their metabolism the processes of fermentation are equal to, or even greater than, the processes of oxidation, and the cancer cells seem to live somewhat similarly to yeast cells or to *Bacillus lactis-aerogenes*, partly by fermentation, partly by oxidation. However, the disturbance of glucide metabolism in cancer cells and hyperglycemia that is often observed in patients with cancer cannot explain the pathogenesis of cancer in the way that Warburg's theory does.

Presse Médicale, Paris

37: 353-368 (March 16) 1929

*Allergin Treatment of Tuberculosis. A. Jousset.—p. 353.
Technic of Kahn Reaction. R. Demanche.—p. 356.

Allergin Treatment of Pulmonary Tuberculosis.—Jousset used allergin treatment in all kinds of chronic tuberculosis, with or without fever, if the patient was not cachectic. After more or less pronounced immediate general, focal and local reactions following subcutaneous administration of the allergin, there was observed a transient (from two to four weeks) amelioration of all functional symptoms and an improvement of the general condition; the physical signs of the tuberculous lesions, however, were not much improved. The amelioration may be maintained by one or two subcutaneous administrations of allergin a month. The author explains the good effect of the treatment not only by the immunizing properties of the allergin itself but also, and perhaps in a greater degree, by the auto-immunization of the patients in response to the focal reactions, following the administration of the allergin.

Revue d'Orthopédie, etc., Paris

16: 113-216 (March) 1929

*Treatment of Tuberculosis of Foot by Resection. E. Sorrel and J. Meisel.—p. 113.
*Hydatid Cyst of Vertebral Column. H. L. Rocher.—p. 138.
Idiopathic Cyst of Bone, Simulating Exostosis. A. S. Papadopoulos.—p. 156.
Wedge-Shaped Resection in Ankylosis of Knee. L. Grimault.—p. 162.
Cysts of Meniscus Lateralis. J. Delchef.—p. 172.
Chondroma of Flexors of Hand. E. Brenckmann and A. Jung.—p. 176.

Treatment of Tuberculous Arthritis of Foot by Resection.—Sorrel and Meisel emphasize the good results of treatment of tuberculous arthritis of the foot by resection. Among fifty-one patients, the condition was cured in only seven of eleven children, aged less than 9, by prolonged immobilization and heliotherapy; in four patients, aged more than 55, amputation of the foot was done; in the great majority of the other patients, aged from 10 to 45, more or less extensive resection was performed. Because of the possibility of some deformity of the foot and of disturbances in locomotion after smaller partial resections, the authors prefer mediotarsal and tarsometatarsal resections even in fairly limited tuberculous lesions; in more extensive articular lesions they perform tarsectomy. Three months after the resection, the first plaster cast is replaced by a new one, and the patient is allowed to start gradually to walk with crutches. In patients with fistulas, the immobilization is prolonged until the fistula has closed.

Hydatid Cyst of Vertebral Column.—Rocher reports a case of hydatid cyst of the vertebral column in a girl, aged 13, interesting because of the rarity of this condition and because of the cure in this particular case, despite the usually poor prognosis. The patient could not walk and complained of intercostal shooting pains. There was spastic paraplegia with a bilateral Babinski sign, clonus of the foot and of the patella, exaggeration of the tendon reflexes, scoliosis in the upper dorsal part of the vertebral column and tenderness over the fourth,

fifth and sixth spinous processes; the sphincters were not paralyzed, the Wassermann reaction was negative and eosinophilia was present (4 per cent); the complement fixation test for hydatid cysts (Weinberg reaction) was positive. Roentgenographic examination showed a right juxtavertebral conical shadow extending from the fourth to the seventh rib, with its base blending with the vertebral column, and some slight disturbances in the structure of the vertebrae and of the ribs corresponding to the shadow. After the resection of the proximal end of the fifth and sixth ribs, a hydatid cyst of the size of a lemon was opened, emptied, curetted and drained. One of the vertebral bodies was destroyed down to the dura mater; therefore a suitable orthopedic apparatus was applied. All the symptoms rapidly disappeared and six weeks after the operation the child could walk, though one other minor surgical intervention for the fistula of the wound was necessary to complete the cure.

Schweizerische medizinische Wochenschrift, Basel

59: 301-324 (March 16) 1929

Senile Changes in Eye. A. Vogt.—p. 301.
*Frequency, Diagnosis and Treatment of Undulant Fever. W. Löffler. —p. 304.
*Functional Tests of Liver. H. Staub.—p. 308.
Physiology of Liver. M. Arthus.—p. 315.

Frequency, Diagnosis and Treatment of Undulant Fever.—During a period of six years Löffler observed ten cases of undulant fever. All the patients, with one exception, were men. In seven instances the disease could be traced directly to infection with *Brucella abortus*. In three cases the cause was not quite clear. However, the agglutination and the binding of complement were positive in all cases except one. The disease usually started with chills and a slight general indisposition. In view of the pulse rate, the appearance, and the general condition of the patient, the temperature was unusually high. The tumor of the spleen, a special feature of this disease, was larger and more solid than the splenic tumor present in typhoid. Enlargement of the liver was also observed in several cases. Examination of the blood revealed in some instances a slight anemia. A leukocytopenia by relative lymphocytosis was present in the beginning stage of the disease. In several cases it was very marked. The sedimentation speed of the erythrocytes was slightly increased. No changes were observed in the circulatory system. The disease usually lasted from two to seven months. Agglutination and binding of the complement were detectable for several years. Concerning the treatment, the author states that most remedies were ineffective. Quinine and methenamine proved to be of no value. Neoarsphenamine was effective to some extent. A gold preparation gave good results in one case; because it frequently causes an exanthem, it was not employed in other instances. Serum treatment was also used in several cases, but it was not effective.

Functional Tests of Liver.—According to Staub the liver function tests concern either the excretory function of this organ or the intermediary function of metabolism. He gives a detailed report of several tests and concludes that a test is valuable only if it indicates whether the liver is diseased or not, and whether the disturbance is slight or severe. He points out that with many test methods only a part of the function of the organ is examined. On this account disturbances in the beginning stages are frequently not detected. In animal experiments a tolerance test, with which several functions were examined simultaneously, was useful. As the most useful methods for diagnosis he names qualitative and quantitative detection of urobilin in the urine or feces, determination of the amount and quality of bilirubin in the serum, and the galactose tolerance test.

Prensa Médica Argentina, Buenos Aires

15: 1153-1192 (Feb. 28) 1929

*Pott's Paraplegia Treated by Lumbar Sympathectomy. J. Diez.—p. 1153.
Pathologic Changes in Nephritis. C. Pinedo.—p. 1162.
Azotemia Without Uremia. S. Nudelman and M. Schteingart.—p. 1177.
Lead Treatment of Cancer. A. H. Roffo and O. Calcagno.—p. 1180.

Pott's Paraplegia Treated by Lumbar Sympathectomy.—Diez says that among all the complications of Pott's disease, paraplegia is the most serious and the most resistant to treatment. Lumbar sympathectomy has yielded better and more constant results than those obtained by other treatments. Surgical intervention is dangerous and does not always give good results. The author presents three cases in which he obtained improvement by lumbar sympathectomy. The first patient is able to walk without the aid of a cane. His slight spasticity can be discovered only by careful examination. The second patient, who was badly paralyzed, began to walk sixteen days after the operation, aided by two persons. The third patient, aged 16, when 13 years old began to have intense pains in the right lumbar region, developing concomittantly with a deviation of the trunk to that side. Jacket plasters were used for one year and Albee's operation was performed, without result. He had marked kyphosis and gait disturbances, dragging first the right foot and, after some time, the left foot. Three months later his gait incapacity was complete and he was forced to remain in bed. Roentgenography showed an enormous kyphosis and massive destruction of the tenth and eleventh dorsal vertebrae, and decalcification of the seventh, eighth and ninth vertebrae. There was a calcified abscess the size of a man's fist on the diseased vertebrae. Resection of the right lumbar ganglions did not give any relief. A second operation was performed, the left lumbar ganglions being resected from the second to the fifth lumbar vertebra. Marked improvement followed this operation. The patient was able to perform all flexion movements. After five months Pott's disease was still active, but there was marked improvement in the patient's general condition and he was beginning to walk again, aided by two persons.

Siglo Médico, Madrid

83: 457-484 (March 16) 1929

*Heredity of Schizophrenia. P. Alvarez Nouvilas.—p. 457.

Heredity of Schizophrenia.—Among 2,600 schizophrenic patients observed by Alvarez Nouvilas in the provincial institution for the insane at Pamplona, Spain, there was never an association of schizophrenia in father and son. He did, however, observe this association in mother and son or daughter. The author reports three groups of this kind. The first group consisted of a mother, aged 56, and two sons, aged 33 and 27, respectively. The second group consisted of a mother, aged 63, and her son, aged 40. A mother, aged 65, and her daughter, aged 42, formed the third group. The author concludes that direct inheritance of schizophrenia is unquestionable, the transmission occurring through the mother rather than the father.

Beiträge zur Klinik der Tuberkulose, Berlin

71: 1-158 (Dec. 21) 1928

Pathologic Changes in Acute Miliary Pulmonary Tuberculosis. W. Grethmann.—p. 1.
*Treatment of Pulmonary Tuberculosis by Calcium Inhalation. H. Hennes. —p. 56.
*Late Results of Phrenicectomy in 100 Cases of Pulmonary Tuberculosis. H. Maendl and E. Schwarzmann.—p. 80.
*Roentgen Treatment of Pulmonary Tuberculosis. H. Deicher and E. Lachmann.—p. 98.
Rôle of Constitution and of General Condition in Etiology of Pulmonary Tuberculosis. V. Schenck.—p. 121.
Rôle of Lipoids in Morphology and Metabolism of Cells, Especially in Tuberculosis and in Similar Wasting Diseases. J. Schumacher.—p. 130.
Auscultation of Cough. A. Winkler.—p. 145.

Treatment of Pulmonary Tuberculosis by Calcium Inhalation.—Hennes tried inhalations of a mixture of powdered calcium sulphate and calcium hydroxide in ninety-six cases of pulmonary tuberculosis. Only patients in an advanced stage of pulmonary tuberculosis, with extensive infiltration of both lungs, fever, a poor general condition and symptoms of disturbances of the sympathetic nervous system, such as night sweats, toxic heart and gastro-intestinal disorder and lowered carbohydrate tolerance, were selected for the experimentation. In all patients the symptoms were considerably ameliorated; the tubercle bacilli disappeared from the sputum in one third of the patients by the end of the treatment, and roentgen examination of the lungs showed that the evolution of the tuberculosis was checked.

Results of Phrenicectomy in 100 Cases of Pulmonary Tuberculosis.—Maendl and Schwarzmann performed phrenicectomy without any other surgical intervention in forty-six cases of pulmonary tuberculosis; in fifty-four additional cases the phrenicectomy was combined with pneumothorax (homo-

lateral or heterolateral), and pneumolysis, or was performed after the pneumothorax had failed, for various reasons, to improve the condition. In all cases there was observed a considerable amelioration of the respiration and of the cough, and a decrease or disappearance of the râles; the pulmonary cavities were collapsed in many cases. Only 4 per cent of the patients who remained under observation for from one to seven years are dead; 60 per cent of the living patients are self supporting; some of the women patients are married and have children. In contrast to this, a mortality of 80 per cent is reported by Bachmeister in similar cases of pulmonary tuberculosis without surgical intervention.

Roentgen Treatment of Pulmonary Tuberculosis.—Deicher and Lachmann think that though roentgen therapy may give good results in certain carefully selected cases of pulmonary tuberculosis, it is not of much therapeutic value in tuberculosis. In thirty-seven cases of fibrous chronic forms of pulmonary tuberculosis, with slow evolution, without fever, with or without cavities, and a fair general condition, there was observed after prolonged roentgen treatment combined with ultraviolet irradiation and the administration of silicic acid preparations (the latter to enhance the fibroblast production) amelioration in twenty-two patients, no effect in three and aggravation in twelve. And in only twelve patients had the amelioration lasted for from one to one and one-half years.

Deutsche medizinische Wochenschrift, Berlin

55: 341-382 (March 1) 1929

Contemporary Tendencies in Medical Science. Goldscheider.—p. 341.
Present Status of Etiology of Influenza. M. Neisser.—p. 344.
Behavior of Circulation and Carbon Dioxide Dissociation in Blood of Patients with Exophthalmic Goiter. H. Zondek.—p. 345.
Metabolism and Circulation in Disturbances of Endocrine System. H. W. Bansi.—p. 347.
Dangers of Abortion and Unreliability of Statistics of Abortion. W. Liepmann.—p. 350.
Allergy in Early Tuberculous Infiltrate. Rehberg.—p. 351.
Cardiospasm and Conditioned Reflex. R. Becker and W. Illig.—p. 352.
Tonsillectomy and General Narcosis. C. Hirsch.—p. 353.
*Treatment of Hay-Fever. Hamm.—p. 355.
Testing of Sterility and Tensile Strength of Catgut for Use in the Army. Kersting.—p. 355.
New Electric Heating Pad. Herzog.—p. 357.

Treatment of Hay-Fever.—Hamm reports good results with diathermy in hay-fever. He treated numerous patients of various ages, employing specially prepared electrodes for application in the nose. For the treatment of the conjunctivitis he advises instillation of 1 drop of a 1:1,000 solution of epinephrine hydrochloride three times a day. This must be continued for the duration of the attack. The author asserts that the ocular condition completely disappeared as a result of this treatment.

55: 383-426 (March 8) 1929

Complement in Serum of Patients with Diseases of Liver. M. Goldner.—p. 390.
Clinical Aspects and Bacteriology of E-Dysentery (Kruse). G. Elkeles.—p. 393.
Pathologic Anatomy of Infraclavicular Infiltrate in Pulmonary Tuberculosis. Pagel.—p. 394.
*Nutritive Value of Raw and Boiled Egg Yolks. A. Scheunert and E. Wagner.—p. 395.
*Nutritive Value of Raw and Boiled Eggs. E. Friedberger and A. Abraham.—p. 396.
Correct Dosage of Orally Administered Crystalline G-Strophanthin. P. G. Böttcher.—p. 398.
*Rectal Liver Therapy. A. Hittmair.—p. 398.
Harmful Effects of Irradiated Ergosterol. P. Bamberger.—p. 399.
Stereoscopic Roentgen Diagnosis of Lobus Venae Azygos. F. Litten.—p. 400.
Dietary Provisions on Ocean Steamships. F. Berger and H. Minning.—p. 401.
Simple Method for Shortening Time of Exposure in Roentgenoscopy. F. Ebert.—p. 404.

Nutritive Value of Raw and Boiled Egg Yolks.—Scheunert and Wagner made experiments on young, growing rats to test the nutritive value of raw and boiled egg yolks. The animals were separated into three groups. The first group was fed with raw egg yolks; for the second group the egg yolks were boiled for ten minutes; the third group received the same as the second, but with the addition of 2 per cent cellulose. This experiment was continued for fifty-nine days. The animals which were fed with raw egg yolks could not digest them well at first, and several rats died. Of the rats which were given the boiled egg yolks none died. Two of the animals which received an addition of cellulose showed slightly less favorable results than the others. The difference between the three groups was, however, insignificant. There was a gradual increase in the weight of all the animals. The authors conclude that in nutritive value raw egg yolks are not superior to boiled egg yolks.

Nutritive Value of Raw and Boiled Eggs.—Friedberger and Abraham state that if only eggs are fed to animals they frequently suffer from toxic effects. In rats alopecia develops. This was observed particularly if the eggs were fed raw or if they had been heated for less than ten minutes. When they were boiled for from twenty to thirty minutes, the toxic effects were nullified. According to most authorities the harmful results of an exclusive egg diet are mainly due to the white of the egg. In referring to the article by Scheunert and Wagner, the authors assert that their own experiments proved that animals fed with raw egg yolks show a considerably greater increase in weight than those fed with egg yolks which had been boiled for thirty minutes at a temperature of 110 C. (230 F.).

Rectal Liver Therapy in Pernicious Anemia.—Hittmair employed liver extracts in the treatment of pernicious anemia. When oral therapy failed he gave the liver in enemas. In several cases he had to discontinue this treatment on account of profuse diarrhea. Later he employed liver preparations in the form of specially prepared suppositories. In two instances the treatment had to be discontinued on account of diarrhea, while in two others this method gave good results.

Medizinische Klinik, Berlin

25: 373-416 (March 8) 1929

*Theory and Practice of Reducing Treatments. E. Grafe.—p. 373.
Process of Childbirth in Juveniles. O. Panek.—p. 376.
*Pathogenesis of Gout. H. Selye.—p. 379.
*Diagnosis of Cystic Kidney. S. Litzner.—p. 381.
*Pyuria in Infants. M. Boddin.—p. 384.
Treatment of Fracture of Neck of Femur by the Whitman Method. A. Mosenthal.—p. 384.
*Treatment of Melancholia. M. Seige.—p. 386.
Pathogenesis and Prophylaxis of Bronchial Asthma. E. Schilcher.—p. 387. C'td.
Undulant Fever with Neurologic Complications. V. Johnsson.—p. 389.

Theory and Practice of Reducing Treatments.—According to Grafe the treatment of obesity aims either to reduce the food supply or to increase the metabolism. He considers the dietetic treatment as being the most effective. For the first four to ten weeks the regimen may be strict. During this time the number of calories should be restricted in proportion to the excessive weight of the patient. A person who is 30 per cent overweight should receive one third less than the normal requirements. In case of greater overweight, the food supply should be more restricted, but the restriction should not be more than 80 per cent of the normal calories. During the dietetic treatment which should follow the strict regimen, the reduction should be about one half. Concerning the composition of the diet the author advises that fats be reduced to a minimum. Carbohydrates in the form of bread and potatoes should be avoided; they should be supplied by vegetables and fruits. Albumin is the only nutritive element that may be taken in larger quantities. The fluid supply should be subjected to a strict regimen, because most persons who are disposed to obesity are inclined to water retention. For this reason salt should also be avoided. If the dietetic treatment does not bring the desired results, it may be necessary to resort to medicaments. The author names particularly thyroid gland preparations, such as thyroxin and thyroiodine. These remedies are valuable because they increase the metabolism. To counteract the tendency to water retention, Grafe recommends merbaphen. By exercise and massage the metabolism may be increased to some extent. The author also directs attention to the Bergonié method. Hydrotherapy and treatment by mineral water aid the effectiveness of other remedies; alone, their results are minimal.

Pathogenesis of Gout.—Selye describes a case of gout in a woman, aged 49, who died of this disease shortly after she had been brought to the hospital. The postmortem examination revealed parenchymatous nephritis, pseudomembranous colitis, calcareous deposits in the kidneys, heart, liver, lungs and pancreas, and an adenoma of the parathyroid glands. The

author discusses various theories concerning the pathogenesis of chalky gout. In the case reported he could not determine whether the adenoma of the parathyroid glands was the cause or the result of the disease. Rats in whom tophaceous gout had been produced artificially did not show enlargement of the parathyroid glands. The author points out that tophaceous gout has been observed frequently in combination with tuberculosis. The assumption that tuberculosis might be a significant factor in the etiology of chalky gout was proved by experiments on guinea-pigs. In tuberculous animals chalky deposits could be produced in different organs by feeding irradiated ergosterol. In healthy animals, however, this preparation did not cause calcareous deposits.

Diagnosis of Cystic Kidney.—Litzner points out that the diagnosis of cystic kidney has always been difficult. He describes a case which from the symptoms had been diagnosed acute hemorrhagic nephritis. The patient received treatment according to this diagnosis, the symptoms gradually disappeared, and he was discharged in an improved condition. For six years he was able to follow his occupation. Then the old symptoms appeared again and he also complained of severe pains in the back. Palpation revealed a tumor of considerable size in the left kidney. This tumor and renal hemorrhage led to the diagnosis of cystic kidney. Pyelography revealed changes in the form of the pelvis of the kidney. Cases reported in the literature proved that such changes are typical in patients with cystic kidney, although they are not always of a uniform character. The author concludes that whenever pyelography reveals such changes, the diagnosis of cystic kidney is indicated. The case reported was unique, because neither high blood pressure nor dilatation of the heart was observed, and also on account of the long interval between the attacks of the disease. The patient died in uremic coma.

Pyuria in Infants. — According to Boddin, pyuria during infancy is not so much a disease as it is a symptom. This symptom may be due to various disturbances in the urinary passage, such as suppurative nephritis, congenital deformities, renal tuberculosis and the formation of stones in the pelvis of the kidney, ureter or bladder. The author gives a detailed report of one case. An infant, aged 5 months, was brought to the hospital appearing pale and weighing only a little more than at birth. Edema of the feet, hands and face was present. Later it also appeared in the region of the kidneys and in the genitalia. A few days later the child died. The postmortem examination revealed hemorrhagic suppurative nephritis, enlargement of the ureter, petechial hemorrhages in the trigon of the bladder, anemia, fatty degeneration of the liver and dropsy. The case was remarkable because the examination of the urine did not reveal the hemorrhagic inflammatory character of the disease. For this reason the case had been diagnosed pyuria, in spite of the fact that the edema indicated nephritis.

Treatment of Melancholia. — Different ovarian preparations employed by Seige in the treatment of melancholia did not bring the desired results. He treated mental disturbances of the climateric period in the following manner: He withdrew 15 cc. of blood from the median basilic vein, diluted it with 5 cc. of sterile water and injected it into the gluteal muscle or into the muscles of the thigh. This injection was given every fifth day and the author asserts that it gave good results. He also points out that the patients with melancholia frequently showed disturbances in the metabolism. Those with diabetic symptoms were treated with insulin. He observed that the sugar content of the blood was rapidly reduced; the psychic symptoms, however, were not influenced.

Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

81: 229-378 (March) 1929

Theory of Blood Groups and Blood Transfusion in Gynecology. K. Heim. —p. 229.
*Hemorrhage from Septum and Abnormal Folds in Cervix. K. Jaroschka. —p. 248.
Congenital Dilatation of Fetal Urinary Bladder as Obstacle in Delivery. E. Goldberger.—p. 253.
Fibromyoma in Puerperium. L. Bublitschenko.—p. 257.
Deaths Caused by Air Embolism in Criminal Abortion. G. Strassmann. —p. 269.
Congenital General Atrophy of Skin. T. Antoine.—p. 276.
Morphology of Oviduct. M. Iwata.—p. 283.
Postoperative Eventration. J. B. Lewit.—p. 299.

Hemorrhage from Septum and Abnormal Folds in Cervix.—Among the various factors causing intrapartum hemorrhages, Jaroschka observed two rather unusual ones: a septum and a fold in the cervix. A primipara, aged 25, who had slight hemorrhages in the second and fifth month, was admitted in the ninth month of pregnancy. The third day, a premature rupture of the amniotic sac occurred; the patient had not had labor pains. A colpeurynter was introduced in order to induce labor and after its removal two large coagula were found in the vagina; a severe hemorrhage started immediately. The author noticed then a thick fleshy septum protruding from the os uteri. Since the hemorrhage increased, the delivery had to be terminated by cesarean section. The author believes that a large artery in the cervical wall was ruptured by the labor pains. Jaroschka found only two similar cases described in the literature. He also reports a case in which a primipara, aged 22, had a circular fold above the cervical orifice, which caused hemorrhage. He advocates careful examination as soon as unusual hemorrhages occur in the first period of gravidity. Removal of the septum or fold may often be sufficient to check the hemorrhage without interfering with the delivery.

Münchener medizinische Wochenschrift, Munich

76: 397-444 (March 8) 1929

Significance of Prognosis. C. Oehme.—p. 397.
Value of Term "Functional Emphysema" in Diagnosis and Prognosis of Asthma. W. Storm van Leeuwen and C. J. Storm.—p. 401. C'td.
Cause of Hypertrophy of Muscular Apparatus of Uterus During Pregnancy. H. Knaus.—p. 404
Endocrinology and Therapy of Pathologic Menstrual Hemorrhages During Puberty E. Glaesmer.—p. 406.
*Detection of Pathogenic Intestinal Bacteria in Blood by Means of Sodium Taurocholate. W. Pfannenstiel and T. Kortmann.—p. 408.
*Experiences in 650 Gallstone Operations. Peitmann.—p. 409.
India Ink Reaction of Cerebrospinal Fluid. L. Benedek and E. von Thurzó.—p. 411.
Faulty Technic as Cause of Changes in Blood Group. A. Poehlmann.—p. 413.
Use of Tribromethanol for Narcosis. A. Heilbronn.—p. 414.
Relation Between Diuresis and Water Content of Blood Under Influence of Diuretics. C. Junkenitz.—p. 415.
Source of Infection in Venereal Diseases. A. Alexander.—p. 415.
Characteristics and Treatment of Gastro-Intestinal Neuroses. I. Boas. p. 417.

Detection of Pathogenic Intestinal Bacteria in Blood by Means of Sodium Taurocholate.—Pfannenstiel and Kortmann point out that the early diagnosis of intestinal diseases is possible only by detection of the pathogenic bacteria in the blood. On account of the bactericidal effect of the serum it is not possible to detect these bacteria in the unchanged blood of the patient. A small addition of bile counteracts this bactericidal effect and the mixture of blood and bile constitutes a culture medium for the pathogenic bacteria. Experiments made by the authors showed that sodium taurocholate may be used in place of the bile. The technic of the test is the following: To each cubic centimeter of blood a small amount of sodium taurocholate is added. This mixture is shaken for about one minute until the salt is completely dissolved. During the incubation the blood frequently becomes gelatinous but this has no influence on the growth of the bacteria. The authors state that with the use of sodium taurocholate they had the same results as with bile, or even better. They assert that this method is simple, because a strict quantitative procedure is not necessary. It can be employed by the practitioner at the bedside.

Experiences with Gallstone Operations. — Peitmann directs attention to the fact that cholelithiasis occurs more often among women than among men. Of 650 patients who received surgical treatment for disturbances in the biliary tract 600 were women. He assumes that pregnancy is probably a significant factor in the etiology of gallstones. The ages of the patients varied between 17 and 74. Concerning the diagnosis the author states that careful observation is of great significance. He also asserts that in recent years roentgenoscopy has been a valuable aid. A tabular report shows that Peitmann performed cholecystectomy in most cases. In answer to the question whether drainage is advisable or whether the wound should be closed, he states that if the operation is made very carefully drainage is not necessary. His statistics show that the fatalities were less in the cases in which drainage had not been employed. Among the total number of patients, the fatalities amounted to 6.3 per cent. The mortality was highest in

those cases which were complicated by carcinoma or necrosis of the liver or pancreas. If these cases are subtracted, the fatalities are considerably less than 5 per cent. The author advises that after the operation the patient should rest in bed for at least ten to fourteen days in order to prevent adhesions. Assuming that carcinoma might result from prolonged irritation, he warns against unnecessary postponement of an operation for gallstones.

Virchows Archiv f. path. Anat. u. Physiol., Berlin

271: 1-316 (Feb. 16) 1929

Aortic Ventricle. H. Gerstmann.—p. 1.
Stenosis of Conus Arteriosus. L. Skubiszewski.—p. 14.
Malformations of Bile Ducts. F. Feyrter.—p. 20.
Myeloschisis with Division of Spinal Cord Into Three Segments. R. Altschul.—p. 45.
Schistosoma of Reflexum. F. Hecke.—p. 74.
Microscopic Changes in Experimental Rickets. T. Skaar and K. Häupl. —p. 100.
*Systemic Disease of Bone Marrow with Osteosclerosis. A. A. Wassiljeff. —p. 134.
Familial Splenic Anemia in Infants. H. Hamperl.—p. 147.
*Hypertrophic Pulmonary Osteo-Arthropathy. T. Konschegg.—p. 164.
Changes in Blood and Blood-Forming Organs in Benzol Poisoning. A. Woronow.—p. 173.
*Effect of Benzene Poisoning on Blood. G. Orzechowski.—p. 191.
*Changes in Spleen in Malaria. B. A. Photakis.—p. 194.
Involvement of Capsule of Glomerulus in Diffuse Glomerular Nephritis. E. Randerath.—p. 197.
Changes in Kidney in Diffuse Glomerular Nephritis. R. Hückel.—p. 211.
Inversion of Heart. A. Spitzer.—p. 226.
*Uremic Dermatitis. R. Rössle.—p. 304.

Systemic Disease of Bone Marrow with Osteosclerosis.—Wassiljeff reports an unusual form of systemic disease of the bone marrow accompanied by osteosclerosis in a man, aged 30. The condition began with pain in the bones; later epistaxis and hematuria were noted. An examination of the patient's blood shortly before death showed: hemoglobin, 35 per cent; erythrocytes, 1,200,000; leukocytes, 11,450; thrombocytes, 28,950, and anisocytosis, poikilocytosis and normoblasts. At necropsy a generalized osteosclerosis and involvement of the bone marrow was found: replacement of the bone marrow by peculiar, vacuolated cells originating from the endothelium of the blood vessels, and complete disappearance of the megakaryocytes. In the liver, spleen and lymph nodes, hyperplasia of the cells of the reticulo-endothelial system was present. The author states that he could not find a report in the literature of this combination of osteosclerosis, involvement of the bone marrow and hyperplasia of the cells of the reticulo-endothelial system.

Hypertrophic Pulmonary Osteo-Arthropathy. — Konschegg reports a typical case of hypertrophic pulmonary osteoarthropathy and discusses the theories advanced concerning the pathogenesis of this condition.

Effect of Benzene Poisoning on the Blood.—In a study of the blood in benzene intoxication, Orzechowski found that of the leukocytes the granulocytes showed the greatest reduction in number.

Changes in Spleen in Malaria.—Photakis summarizes the pathologic changes in the spleen in hyperacute malaria, such as swelling, hyperemia, softening and endothelial hyperplasia without involvement of the reticulum.

Uremic Dermatitis. — Rössle discusses the microscopic appearance of the skin in uremic dermatitis. He states that dermatitis occurs almost constantly in uremia. In uremic dermatitis all transitional forms are found, from simple inflammation of the corium with perivascular cellular infiltration and endothelial swelling to necrosis and herpes-like pandermatitis. Chemical tests show a high urea content of the skin in this condition.

271: 317-624 (Feb. 27) 1929

Types of Cells in Irritated Human Connective Tissue. G. Meyer.—p. 317.
Changes Produced by Helminths in Body of Host. R. Hoeppli.—p. 356.
*Effect on Lungs of Inspiration of Different Kinds of Carbon Particles. H. Borchardt.—p. 366.
*Contracted Suprarenals. E. Omelskyj.—p. 377.
*Edema in Beriberi. J. Mebius.—p. 432.
Phlegmonous Inflammation of Chorion. W. Laubscher.—p. 450.
Histology of Generalized Osteophytosis (Hypertrophic Pulmonary Osteo-Arthropathy). C. Crump.—p. 467.
Circulation in Monster of Ileothoracopagus Dibrachius Tripus Type. O. Semon.—p. 512.
Retarded Development of Glands of Internal Secretion. W. Landauer. —p. 534.
Epignathous Teratoma of Hypophyseal Region. E. J. Kraus.—p. 546.
Morphology and Function of Lymphatic Tissue. J. Wätjen.—p. 556.
Estrual Hormone and Nymphomania in Cattle. W. Frie and E. Lutz.— p. 572.

Effect on Lungs of Inspiration of Different Kinds of Carbon Particles. — In the postmortem examination of the lungs of guinea-pigs which had been made to breathe air containing various kinds of carbon particles, Borchardt found that lignite produced the most marked tissue changes. The inspiration of coal dust and pulverized charcoal resulted in less severe tissue changes, and the inspiration of soot did not produce any changes.

Contracted Suprarenals. — Omelskyj reports one case of bilateral cytotoxic contracted suprarenals (found at the postmortem examination of a patient who had died from hypophyseal cachexia) and two cases of unilateral contracted suprarenal. In all three cases the changes in the suprarenals were typical: increased thickness of the capsule and decreased thickness of the cortex and the medulla.

Mechanism Involved in Production of Edema in Beriberi.—On the basis of his study of three cases of acute beriberi, Mebius advances the theory that the edema in beriberi is not due to insufficient activity of the heart but to an increased permeability of the capillaries.

Wiener klinische Wochenschrift, Vienna

42: 289-320 (March 7) 1929

*Radium Treatment of Cancer. L. Arzt.—p. 289.
*Radium Treatment of Cancer and of Precancerous Growths. H. Fuhs. —p. 291.
Histologic Changes in Cancers Following Irradiation. A. Matras.—p. 293.
*Malignant Endocarditis in Cases of Syphilis of Aorta. J. Skursky.— p. 293.
*Prophylaxis of Measles. C. Leiner.—p. 295.
*Cause and Treatment of Genital Hemorrhages in Young Girls. F. Kermauner.—p. 297.
*Clinical Evaluation of Sensibility to Pressure on Achilles Tendon and on Testicle. T. C. Hunt.—p. 299.
Diagnosis and Treatment of Pyelitis. V. Blum.—p. 305.
Treatment of Exophthalmic Goiter. F. Pineles.—p. 307.

Radium Treatment of Cancer.—Arzt discusses two methods of radium treatment: irradiation with direct contact and distant irradiation. In direct contact irradiation the radium containers are surrounded with isolating materials which serve as a filter. The filter excludes the alpha and beta rays, which produce harmful effects on certain skin tissues, and only the more penetrating gamma rays are effective. For irradiation within the tumor either Dominici's tube or radium needles are employed. In recent years containers have been constructed which do not contain radium element but radon. These so-called radon capillaries are used in the same manner and for the same purpose as Dominici's tube or radium needles. A special probe-like apparatus is employed for irradiation of the posterior part of the nose, the esophagus, the rectum and the bladder. For distant irradiation the container is placed from 1 to 3 cm. from the tissue which is to be treated. This method is especially valuable for the treatment of large areas, because the diameter of the cone of rays increases with the distance. Distant irradiation is more penetrating while its effects on the outer skin tissues are lessened. The author states that it is particularly suited for the prophylactic treatment of patients in whom cancers have been removed by operation. To increase the effect of the treatment the irradiation may either be given from several sides or a combination of contact and distant irradiation may be used. Concerning the effectiveness of the radium treatment Arzt makes no definite statement. He states that in a period of sixteen years, nearly 1,600 patients with cancer have been treated at the radium station. It was, however, not possible to ascertain in how many cases the results were permanent.

Radium Treatment of Cancer and of Precancerous Growths.—Fuhs states that radium therapy is especially suited for cancers of the skin and also for those growths which frequently precede the carcinoma, such as epithelial thickening of the skin of the lips or of the oral mucous membrane, and leukoplakia of the tongue. Indications for prophylactic radium irradiation are epithelial thickening of the skin of the face, neck, arms or hands, which is observed particularly in older persons;

occupational carcinoma such as tar or paraffin cancers, and, finally, the verrucous formations on the hands of roentgenologists and radiologists. In cancer of the face radium irradiation gives better cosmetic results than surgical treatment. An operation is generally necessitated by carcinomas of the breast and of the oral cavity. However, for after-treatment distant irradiation with the penetrating gamma rays is advisable.

Malignant Endocarditis in Cases of Syphilis of Aorta.—Skursky reports two cases of malignant endocarditis combined with syphilis of the aorta. He asserts that the prognosis in such cases is usually unfavorable and the treatment is difficult. Endocarditis as well as syphilis has harmful effects on the myocardium. Malaria inoculation treatment should therefore not be employed, because it overtaxes the circulation. Acriflavine preparations gave only slight results and both patients died.

Prophylaxis of Measles.—Leiner evaluates various methods for the prophylaxis of measles. He considers the Degkwitz method as the most effective. He employed it twice in a children's hospital when a child with measles had been brought in from the outside. All children were given the prophylactic injection and an epidemic was prevented. The serum should be taken from patients with measles during the period of convalescence. Experiments were made to obtain the serum from animals. However, this did not prove effective. At times when it is difficult to secure a sufficient amount of serum, particularly in the beginning of an epidemic or in country districts far from a serologic institute, serum or blood from adults who have had measles may be injected. This method is effective in about 50 per cent of the cases. However, the quantity which is required for the prophylaxis has to be considerably larger than if the regular serum is employed. The author concludes that the Degkwitz method is valuable for infants, for children with rickets, tuberculosis or other diseases, and especially to prevent epidemics in children's homes and hospitals.

Cause and Treatment of Genital Hemorrhages in Young Girls.—Kermauner asserts that according to statistics irregularities in the menses occur in nearly 50 per cent of young girls. Most of these disturbances are, however, only temporary and not of a serious nature. If they become more severe, especially if the first hemorrhages last for several weeks, and if they affect the general condition, examination of the blood and of the genitalia is advisable. In many cases these hemorrhages are due to acute and chronic infectious diseases such as tuberculosis, typhoid, influenza and pneumonia. In other instances they may be caused by a trauma, by hereditary or acquired syphilis, or by genital hypoplasia. It is important to determine the cause of the hemorrhage because it frequently indicates the right therapeutic method. Those which are due to hypothyroidism may often be counteracted by the use of thyroid preparations or by irradiation of the thyroid. Hemorrhages caused by hypophyseal disturbances may be treated by irradiation of the pituitary body. Of the various medicaments the author advocates particularly iron preparations. To arrest the hemorrhage he advises, in addition to generally employed hemostatic agents, the application of hypophyseal and ovarian preparations, irradiation of the spleen, or blood transfusion. Surgical treatment, such as supravaginal amputation of the uterus, should be resorted to only in extreme cases. In all instances the general therapy should aim at a strengthening of the constitution. Care should be taken that the patient has sufficient rest, fresh air and sunshine. The nutrition and digestion should also be watched.

Clinical Evaluation of Sensibility to Pressure on Achilles Tendon and on Testicle.—Hunt points out that lessened sensibility to pressure on the achilles tendon or on the testicle is generally considered an indication of tabes, while an increased sensibility of the achilles tendon is assumed to be symptomatic for sciatica. In order to ascertain the clinical value of these symptoms, Hunt examined 100 patients, fifty men and fifty women, with different internal diseases. However, none of them were syphilitic and none of them had organic nervous diseases. Patients with a positive Wassermann reaction were excluded from the test. The author observed either complete absence or much reduced sensibility to pressure on the achilles tendon in 35 per cent of the patients examined. Most of these were neuropathic persons. Reduced or complete absence of sensibility to pressure on the testicle was noticed in 18 per cent of the men. An increased sensibility of the achilles tendon as an indication for sciatica could not be proved. On the basis of his observations, the author concludes that these symptoms are not absolute indications of former syphilitic infections and have little practical value.

42: 321-352 (March 14) 1929

*Treatment of Cancerous Cachexia. J. Pal.—p. 321.
Disturbances in Menstruation as Cause of Diseases of Joints. B. Aschner. —p. 322.
Bilateral Pneumothorax Treatment of Pulmonary Tuberculosis. W. Neumann.—p. 325.
Spirochetes in Gastro-Intestinal Tract. E. Silberstern.—p. 327.
Modern Treatment of Rheumatism. E. Freund.—p. 331.
*Agranulocytosis During Infancy. N. Christof.—p. 335.
Simplified Method for Calculation of Basal Metabolism with Krogh's Apparatus. R. Borger.—p. 337.
Pathologico-Anatomic Casuistics of Thrombosis. R. Maresch.—p. 338.
Uterine Hemorrhages and Their Treatment. E. Graff-Pancsova.—p. 340.

Treatment of Cancerous Cachexia.——Pal points out that in the treatment of cancer the attending and subsequent phenomena, especially cancerous cachexia, should also be considered. The cachexia may be either anemic or toxic. Contemporaneously with carcinoma of the skin or of the mucous membranes, anemic cachexia is frequently observed. It is assumed that the deficiency in red blood corpuscles is due to a disturbance of the function of the bone marrow. The author made experiments which induced him to believe that the effectiveness of liver therapy is due to its influence on the bone marrow. Moreover, he assumes not only that liver extracts have this effect but also that such substances may be found in other organs. He names especially the glands of internal secretion. He states that experiments are being conducted to determine which extracts will give the best results. He concludes that in the therapy of patients with cancer one should not neglect to supply them with substances which influence the function of the bone marrow. He names particularly suprarenal and liver extracts.

Agranulocytosis During Infancy.—A case of agranulocytosis is reported by Christof. A child of healthy parents developed a general pyodermia two weeks after birth, recovering in about three weeks. Two weeks after that the infant had a hemorrhagic gastro-enteritis with high fever, vomiting and diarrhea. The child became emaciated, but after two weeks it recovered. A short time later suppurative pustules developed on the occiput, neck and back and in the axilla. The occipital, retro-auricular, submental and axillary glands were swollen, hard and painful. The tonsils were likewise swollen but without coating or pus. Examination of the blood revealed agranulocytosis. For twenty days the patient was treated with an acriflavine preparation and other medicaments. After that the condition of the blood gradually improved and the prognosis seemed more favorable. Incision of the axillary glands yielded a large amount of pus. The bacteriologic examination revealed diplococci, staphylococci and streptococci. The submental glands opened spontaneously and discharged pus. After that the condition of the patient gradually improved, the number of leukocytes increased, the pustules disappeared, and after several weeks the child recovered completely. The author assumes that the disease was caused by a streptococcus. Moreover, he states that the study of this case proved that agranulocytosis is not a disease *sui generis* but rather the symptom of a generalized infection. The case was remarkable not only because the child was very young but also because of the complete recovery. Agranulocytosis usually has a fatal outcome. The patient's recovery is explained by the author as being due to the fact that the hematopoietic system of infants has a greater regenerative power than that of adults.

Zeitschrift für klinische Medizin, Berlin

110: 1-162 (Feb. 20) 1929

Oxygen Consumption in Muscular Work. H. Herxheimer and R. Kost. —p. 1.
Oxygen Consumption in Muscular Work in Patients with Exophthalmic Goiter. K. Lange.—p. 27.
Idem. H. Herxheimer and R. Kost.—p. 37.
Insensible Perspiration and Body Weight in Cardiac Decompensation. E. Zak.—p. 44.
*Calcium-Potassium Equilibrium in Organism. P. Spiro.—p. 58.
*Mechanism Involved in Takata-Ara Reaction. R. Nicole.—p. 94.

*Simulation of Cardiac Neurosis by Tonsillitis Lenta. B. Jegorow.—p. 110.
Peptone Treatment of Diarrhea. J. Daichowsky.—p. 129.
*Icterus in Acute Diseases of Liver. A. Mjassnikow and W. Tschilipenko. —p. 140.

Calcium-Potassium Equilibrium in Organism. — Spiro states that marked variations in the calcium and potassium levels of the blood occur even under physiologic conditions: The calcium level varies between 0.0095 Gm. and 0.0115 Gm. per hundred cubic centimeters, and the potassium level varies between 0.0175 Gm. and 0.0225 Gm. per hundred cubic centimeters. In pathologic conditions the calcium and potassium levels of the blood serum only rarely exceed the limits observed under physiologic conditions. Lowering of the potassium level with elevation of the calcium level seems to be characteristic of icterus, particularly of the obstructive type. Elevation of the potassium level with lowering of the calcium level is always present in cardiac and renal decompensation, in essential hypertension, and in diabetes without acidosis. An elevation of both the potassium and the calcium levels occurs in diabetes with acidosis and is doubtless an expression of the general mobilization of alkalis; a lowering of both potassium and calcium indicates a general consumption of alkalis and therefore an unfavorable prognosis. An elevation of the potassium level of the blood without change in the calcium level occurs in sympathetic neuroses, gastric and duodenal ulcer and chronic arthritis and arthropathy.

Mechanism Involved in Takata-Ara Reaction in Cerebrospinal Fluid.—Nicole believes that the greatest value of the Takata-Ara reaction lies in the possibility of differentiating with it the metasyphilitic type of syphilis from the meningitic type. From control experiments with solutions of albumin and globulin obtained from horse serum, he draws the following conclusions concerning the mechanism of the reaction: 1. The color reaction depends primarily on the concentration of protein; globulins produce a weaker red coloration than do albumins, albumoses and peptone. 2. The precipitation is due to globulin and is inhibited by albumin. 3. In the albumin fraction also there is a factor antagonizing the protective action. 4. The red coloration and the precipitation waves of the albumin curve are dependent on definite concentrations of protein and permit a determination of the quantity of protein in the cerebrospinal fluid.

Simulation of Cardiac Neurosis and Endocarditis by Tonsillitis Lenta.—Jegorow suggests that those cases of chronic tonsillitis in which prolonged septic infection is present be designated "tonsillitis lenta." In addition to producing endocarditis and myocarditis, tonsillitis lenta also produces prolonged inflammation of the sympathetic and parasympathetic ganglions and plexuses of the neck; the symptoms of this condition are the same as those of cardiac neurosis and endocarditis. He believes that the diagnosis "endocarditis following tonsillitis" is now frequently made in cases in which only tonsillitis lenta with a cardiac and vascular syndrome due to ganglioplexitis is present. He groups under the term "cardiotonsillar syndrome" a number of subjectively severe cardiac and respiratory symptoms that develop after tonsillitis and are caused not by an infection of the heart but by an infection of the cervical and upper thoracic sympathetic and parasympathetic ganglions and plexuses. The reflexogenic zones in the walls of the carotid arteries probably become involved in the infection and may produce complicated reflexes which modify the cardiac rhythm, the blood pressure and the respiration. In cases of suspected organ neuroses, particularly cardiac, a careful examination of the reflexogenic arterial zones of the sympathetic nervous system should be made. In many cases of so-called cardiac neurosis and endocarditis, treatment of the tonsils, pharynx, sinuses, teeth, ears, larynx and nose, as well as of cervical macrolymphadenitis, microlymphadenitis and ganglionitis, is indicated.

Icterus in Acute Diseases of the Liver.—From a study of twenty cases of icterus, Mjassnikow and Tschilipenko draw the following conclusions: 1. "Catarrhal" icterus and the forms of icterus caused by syphilis and arsphenamine are characterized from the very beginning by a high urobilinuria. From the amount of urobilin excreted at times in the urine, it is evident that more than half the urobilin formed is resorbed from the intestine. 2. In the forms of icterus mentioned, bile pigments are never completely absent in the duodenal contents and in the feces. 3. The cholesterol level of the blood in these forms of icterus is lowered during the height of the process (the degree of hypocholesterinemia corresponding to the severity of the disease). In obstructive icterus the cholesterol level of the blood is usually higher than normal.

Zeitschrift für Tuberkulose, Leipzig

53: 97-192 (March) 1929

Development of Pulmonary Tuberculosis. G. Liebermeister.—p. 97.
Neurasthenia Peripherica Localis. J. Petruschky.—p. 102.
*Dengue Fever and Pulmonary Tuberculosis. B. Papanikolau.—p. 107.
*Premenstrual and Intramenstrual Decrease in Temperature in Tuberculosis. S. Kaufmann.—p. 112.
*Dark Field Demonstration of Tubercle Bacilli in Sputum. S. von Stubenrauch.—p. 122.
*Action of Fat-Splitting Ferment from Guinea-Pig's Lung on Tubercle Bacillus. D. Kanócz.—p. 124.

Dengue Fever and Pulmonary Tuberculosis.—In the 1928 epidemic of dengue fever in Greece (in which 90 per cent of the inhabitants of Athens contracted the disease), Papanikolau noted that: 1. Dengue fever predisposes persons to pulmonary tuberculosis. 2. In some cases it exerts a favorable action on pulmonary tuberculosis that is already present. In most cases in which it exerts an unfavorable action, the action is of short duration. 3. Dengue fever does not exert an unfavorable action on patients with healed pulmonary tuberculosis.

Premenstrual and Intramenstrual Decrease in Temperature in Tuberculosis.—On the basis of a study of the premenstrual and menstrual temperatures of seventy tuberculous women, Kaufmann challenges the generally accepted belief that the premenstrual period in tuberculous women is characterized by a rise in temperature. She noted that in the seventy women the temperature during the premenstrual period was increased in ten (14.3 per cent); variable in fifteen (21.4 per cent); unchanged in sixteen (22.8 per cent), and decreased in twenty-nine (41.4 per cent). In the menstrual period it was increased in nine (12.8 per cent); variable in nineteen (27.1 per cent); unchanged in eighteen (25.7 per cent), and decreased in twenty-four (34.3 per cent).

Dark Field Demonstration of Tubercle Bacilli in Sputum.—In a comparative study of the dark field method and the regular method of demonstrating tubercle bacilli in sputum, von Stubenrauch found that, although the former method was more easily carried out, it never revealed tubercle bacilli in sputum in which they could not be demonstrated with the method now in common use. He states that for the general practitioner the new method does not offer any important advantages over the old method.

Action of Fat-Splitting Ferment from Guinea-Pig's Lung on Tubercle Bacillus.—Kanócz reports that a fat-splitting ferment can be obtained from the lungs of healthy guinea-pigs. When tubercle bacilli are exposed to the action of this ferment they lose their fatty capsules. In experiments on guinea-pigs, the author demonstrated that the subcutaneous injection of tubercle bacilli whose capsules have been removed by the fat-splitting ferment gives good results in the prophylaxis and treatment of tuberculosis.

Zeitschrift für urologische Chirurgie, Berlin

26: 157-388 (March 4) 1929

*Renal and Ureteral Calculi. R. Chwalla.—p. 157.
Functional Tests in Surgical Diseases of Kidney. A. Furtwaengler.—p. 198.
Hydronephrotic Dilatation in Double Kidney. J. Minder.—p. 212.
Functional Tests in Surgical Diseases of Kidney. J. Minder.—p. 239.
Congenital Anomalies of Kidney and Ureter. J. Gottlieb.—p. 265.

Renal and Ureteral Calculi.—In the study of 234 cases of renal and ureteral calculi, Chwalla found that 10 per cent of the renal calculi and 15.4 per cent of the ureteral calculi did not show on the roentgenogram. Some of the calculi which were not visible on the roentgenogram were composed of phosphates and oxalates and were as large as beans. The percentage of error in the roentgen diagnosis was higher in the cases of ureteral stones because of their small size. In two of the cases calculi which had been demonstrated roentgenologically could not be found at operation in spite of a thorough search in which bimanual palpation and a needle were used. The author does not believe that any conclusions concerning the

severity and extent of the pathologic changes in a kidney containing calculi can be drawn from the results of the indigo carmine test. Even when the changes in the organ are marked, the removal of the calculi is frequently followed by a complete return of the function of the kidney to normal. The author observed cases of hydronephrosis due to calculi in which the kidney regained its normal capacity and function following operation. He therefore recommends conservative treatment in cases of renal and ureteral calculi.

Zentralblatt für Chirurgie, Leipzig

56: 577-640 (March 9) 1929

Cholecystography: Errors. H. Paschoud and L. Zukschwerdt.—p. 578.
Clamp for Twisting Steel Wire: Bone Fractures. H. Matti.—p. 582.
*Treatment of Traumatic Increased Intracranial Pressure by Grape Sugar Solutions. F. W. Thomas.—p. 586.
Payr's Pyloromyotomy. H. Hilarowicz.—p. 590.
Chondromatosis of Right Knee Joint. H. Schrang.—p. 593.
Pathology and Surgical Treatment of Exophthalmic Goiter. K. Urban.—p. 597.
Surgical Knots: Technic of Tying. I. L. Zimches.—p. 602.

Treatment of Increased Intracerebral Pressure with Dextrose.—Thomas reports fourteen cases of head trauma in which increased intracerebral pressure was present and immediate relief from symptoms was obtained by the intravenous injection of 100 cc. of a 50 per cent solution of dextrose. The author feels that such injections are indicated in all head injuries in which there is increased intracerebral pressure regardless of whether shock is present or not. He does not make any eyeground examinations, nor does he heed the general blood pressure, because, as in one case cited, the brain pressure may be high. He always injects 100 cc., but has repeated the injection as often as three times in one day. He sees no objection to injecting 200 cc. Diuresis is increased immediately, and glycosuria may be present for from two to four days. He advises examining the urine before injection, so that if it contains sugar then, insulin may be administered at the time of making the injection.

Meditsinskoe Obozrenie Nijnego Povoljia, Astrahan

7: 1-137 (Nov.-Dec.) 1928

Toxicity of Chlorine Compounds of Methane and Ethane. G. A. Malov.—p. 50.
*Effect of Local Immunization in Experimental Arthritis. B. I. Kurochkin and K. G. Emelianchik.—p. 82.
*Effect of Calcium Chloride on Production of Hemolysin. N. Alamdarov.—p. 96.
Rôle of Body Structure in Etiology of Epilepsy. I. P. Donscoy.—p. 102.
Intestinal Intussusception in Adults. N. I. Sorokin.—p. 117.

Effect of Local Immunization in Experimental Arthritis.—To obtain a local immunization of the articulations, Kurochkin and Emelianchik injected a gradually increasing dose of staphylococcic antivirus (Besredka) every forty-eight hours into the tibiofemoral articulation of the hind leg of rabbits. To test the immunity produced, a certain amount of virulent staphylococci was introduced into the same articulation forty-eight hours after the last administration of the antivirus. After the first injection of the antivirus, the inoculation of the same articulation with staphylococci produced intense general and local reactions, with considerable swelling of the articulation, redness of the skin and limitation of the movements. The symptoms lasted from two to three weeks, and in two rabbits the ankylosis remained permanently. However, the reaction to the staphylococcus inoculation decreased with repeated injections of the antivirus into the articulation, and after the third or the fourth local immunization no reaction was observed in the immunized articulation. The immunization lasted five and one-half months on the average and was localized in the articulation into which the injections of the antivirus were made; the other articulations were susceptible to the staphylococcus infection.

Effect of Calcium Chloride on Production of Hemolysin.—Alamdarov prepared antisheep hemolysin as usual by repeated injections of washed sheep's erythrocytes into the marginal vein of the ears of rabbits. But to the rabbits of one group intravenous injections of 1 per cent calcium chloride solution had been given before, during and after the injections of the sheep's erythrocytes; to the rabbits of the second group the calcium chloride was given only during and after the injections of the sheep's erythrocytes, and the third group of rabbits did not get any calcium chloride. The strongest hemolysins were obtained in the blood serum of the first group of rabbits. The weakest hemolysins were obtained in similar experiments on parathyroidectomized dogs, which proves the stimulating effect of calcium chloride on the production of hemolysin.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

73: 1201-1336 (March 9) 1929

Carcinoma and Teratoma of Testis. R. R. Rochat.—p. 1202.
Rat-Bite Fever. F. C. Kuipers and A. C. Ruys.—p. 1207.
*Adiponecrosis Subcutanea Neonatorum. M. de Bruin.—p. 1221.
Abnormal Course in Healing of Certain Wounds. J. W. Loos.—p. 1230.
*Brain Tubercle in Generalized Tuberculosis. M. Amir.—p. 1233.
Incarceration of Retroflexed Gravid Uterus. J. van Woerden.—p. 1240.

Subcutaneous Adiponecrosis in New-Born Infant.—De Bruin reports a case in an infant born at term of healthy parents, and points out certain departures from the usual clinical picture. Immediately after the normal birth, the midwife noted that the skin felt unusually hard and rigid in several places. The adiponecrotic areas were not sharply demarcated, which was peculiar, since, as a rule, the hard areas give the impression of plates of rubber inserted beneath the skin. Scleroderma was also found on the calves (which has value only from the standpoint of the history of the case). The adiponecrotic areas were present immediately after birth, whereas as a rule they appear a few days afterward. The birth was normal, while in most cases the birth is long drawn out or is completed with instruments or by means of version and extraction. From the clinical symptoms presented by the patient, as revealed by the outcome of the chemical examination, one may assume as highly probable that the fat about the kidney had undergone the same changes, which is unusual. As to etiology, a traumatic origin appears most likely, some ascribing considerable influence to the cold. The strongest proof of traumatic origin is commonly the circumscribed hardness of the skin of the cheek where the blade of the forceps has pressed.

Brain Tubercle in Generalized Tuberculosis.—Amir reports a rare case of brain tubercle in generalized tuberculosis in a native of the Dutch East Indies. On admission to the hospital, the young man, aged 21, had a well nourished appearance but nevertheless looked sick. He had been referred with a subclavicular infiltrate of the left lung. The patient had coughed during the preceding eighteen months. The sputum at times contained tubercle bacilli. While in the hospital, the patient began to complain of severe head pains, which, beginning in the neck, extended to the right side of the head and finally to the whole head. This and other symptoms led to the diagnosis of a tumor of the right cerebral hemisphere. At operation, a subcortical tumor was found and removed in its entirety. The extirpated tumor was diagnosed as a conglomerate tubercle. Langhans' cells and an infiltration of epitheloid cells and lymphocytes were plainly discerned in the photomicrograph and, after careful search, a number of tubercle bacilli were found. The patient did not long survive the operation.

Norsk Magasin for Lægevidenskapen, Oslo

90: 217-328 (March) 1929

Masculine and Feminine Pseudohermaphrodism. O. Berner.—p. 217.
"Carcinoids" in Small Intestine and Appendix. B. Dahl.—p. 233.
Cesarean Section in Infected Delivery. K. Skajaa.—p. 249.
Placenta Praevia and Shock. K. Skajaa.—p. 274.
Shock in Placenta Praevia. K. Brandt.—p. 282.
*Cinchophen and Jaundice. K. Motzfeldt.—p. 283.

Cinchophen and Jaundice.—Motzfeldt says that quinolin compounds are now widely used without a physician's direction in the treatment of pain in diseases of the joints, muscular rheumatism, and neuralgia. He reports a case of severe toxic jaundice in a woman, aged 27, who was given 117 Gm. of cinchophen in two periods in the course of two months. He has found in the literature reports of twenty-five cases of toxic jaundice following the use of cinchophen, all but one occurring during the last two years, with ten deaths as a result of yellow atrophy of the liver. Because of their hepatotoxic properties, caution is advised in the administration of these preparations.